hp deskjet 450 mobile printer

user's guide

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1 Setting Up

This printer provides quick, professional mobile printing. You can print from notebooks, desktops, wireless devices such as personal digital assistants (PDAs) running Microsoft® Pocket PC Software, Windows® CE, and Palm OS®, digital cameras via a CompactFlash card, and mobile phones with infrared connectivity. It provides high-quality output and vibrant colors on media up to 8.5 in x 14 in (216 x 356 mm).

For more information

The following resources provide more information about the printer:

- **Setup Poster** — Provides illustrated setup information. A printed version of this document comes with the printer. An electronic version is available as an Adobe® Acrobat® Portable Document Format (PDF) file on the Starter CD.
- **Onscreen User's Guide** — Provides information about setting up and completing basic tasks with the printer and solving printer problems. This guide is available as a PDF file and as a Microsoft® HTML Help (CHM) file on the Starter CD. (To view the CHM file, your computer must be running Microsoft Windows and Internet Explorer version 4.01 or later. If your computer does not meet these requirements, use the PDF version.)
- **HP Deskjet 450 Personal Digital Assistant (PDA) Guide** — Provides PDA printing instructions, troubleshooting tips, and technical support information. You can transfer this guide to your PDA from the Starter CD or download from the Internet at http://www.hp.com/support/dj450.
- **Regulatory Booklet** — Provides important safety information.
- **Toolbox** (Windows only) — Provides information about ink levels and battery charge level, and links you to the onscreen *User's Guide*, which contains "how-to" and troubleshooting instructions. It also includes myPrintMileage, which keeps track of your printer usage information.
- **Online Help** (Windows only) — Provides information about using the printer driver and the Toolbox.
- **hp instant support** — A web-based tool that provides self-help and troubleshooting tips to diagnose and solve your printer problems. It also includes printer usage information, which helps you understand your printing patterns. This e-service can be accessed via the Toolbox.
- **World Wide Web** — Provides the latest printer information. Visit http://www.hp.com/support/dj450 for details.

Understanding printer parts and functions

Front view
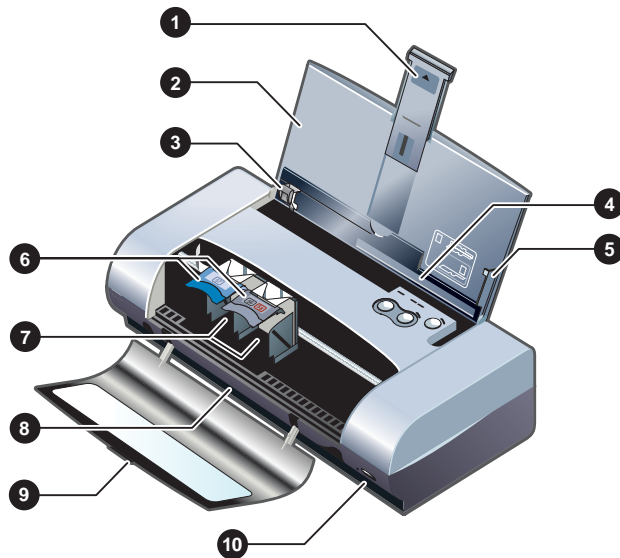
1. **Input tray extension** – Slides up to support larger print media. This prevents possible media feed problems. Pull this up for all media except A5 paper and cards.

2. **Input tray** – Holds the media. Remove media and close this tray when the printer is not in use.

3. **Paper guide** – Slides to fit the width of the media. Guides paper edge and prevents paper skew.

4. **Card slot** – Flips down to feed media of 4.72 in (120 mm) width or less, such as 4 x 6 in index cards, small photo media and Japanese Hagaki cards. Ensures that media is properly aligned for correct print margins.

5. **Alignment guide** – Guides larger media such as Letter or A4 loaded in the input tray into the printer. Ensures that media is properly aligned for correct print margins.

6. **Print cartridge latch** – Facilitates easy removal and insertion of print cartridges. Lifts to allow each print cartridge to be removed from its socket.

7. **Print cartridge socket** – Holds the print cartridge.

8. **Output slot** – Media exits printer from here.

9. **Front access cover** – Provides access to the print cartridges and for clearing paper jams. This cover must be closed in order to print.

10. **Infrared port** – Enables printing from an infrared-sending device, such as a notebook or PDA.

Back view
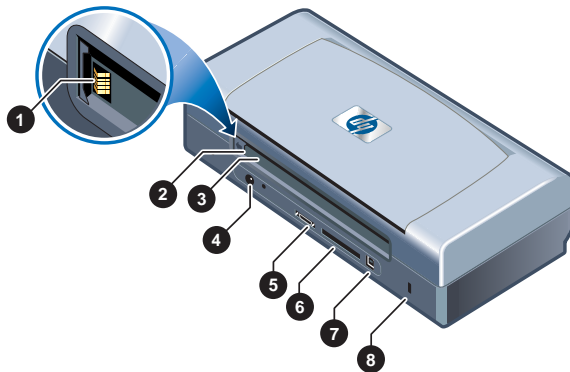
1   **Battery contacts** – Provides contact for power from the optional battery (part number C8222A, see *HP Supplies and Accessories*).

2   **Battery contact cover** – Covers the battery contacts when the optional battery is not installed.

3   **Battery slot** – Insert battery here.

4   **Power connector** – Connect the power cord here.

5   **Parallel port** – Connect the parallel cable here.

6   **CompactFlash card slot** – Accepts a Bluetooth CF card to print via a Bluetooth connection. Also accepts a Type I or II CF card for printing pictures taken from a digital camera.

7   **Universal Serial Bus (USB) port** – Connect the USB cable here.

8   **Kensington lock connector** – Secures the printer with a locked cable. The Kensington MicroSaver® lock system works with this connector and is available at many computer stores.

Bottom view
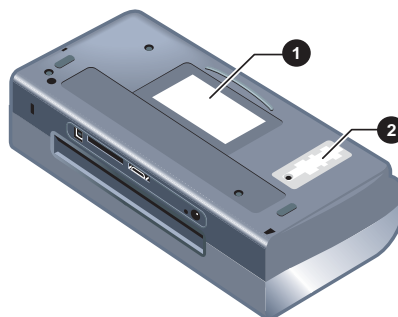
1   **Card holder** – Holds a name card or business card.

2   **Cover of replaceable ink service module** – Provides access to the ink service module. See *Replaceable ink service module*.

Understanding printer buttons and LEDs

For a list of LED (light-emitting diode) combinations and what they indicate, see *LED Reference*.
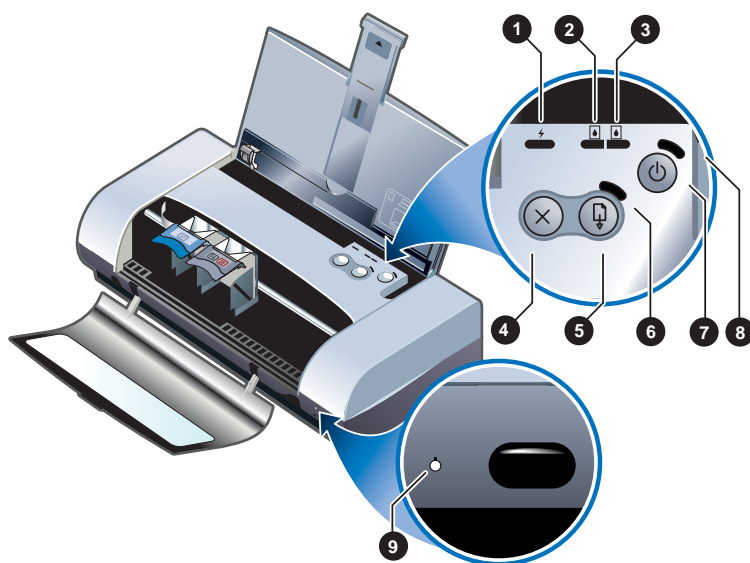
1. **Battery charge LED** – Lights up in green when battery is charging, and red when there is a battery fault.

2. **Left print cartridge LED** – Lights up in amber when the tri-color print cartridge is low on ink, and blinks when it needs to be replaced.

3. **Right print cartridge LED** – Lights up in amber when the black or photo print cartridge is low on ink, and blinks when it needs to be replaced.

4. CANCEL BUTTON – Cancels the current print job. The time it takes to cancel depends on the size of the print job. Press this button only once to cancel a queued print job.

5. RESUME BUTTON – Resumes a print job that is waiting or after temporary interruption (for example, when adding print media to the printer).

6. **Resume LED** – Lights up in amber when a print job is waiting, and blinks when the printer requires user intervention (for example, to clear a paper jam or to close an open cover).

7. POWER BUTTON – Turns the printer off or on.

8. **Power LED** – Lights up in green when the printer is turned on using the AC adapter or a 41-100% charged battery. When powered by battery, lights up in amber when battery is 10-40% charged, and red when battery is below 10% charged. Blinks during printing.

9. **Infrared LED** – Lights up in green when the printer is receiving from an infrared-sending device.

Setting up the printer

Step 1: Check the box contents

Refer to the Setup Poster for an illustrated guide to all the parts that should come in the box.

1 HP Deskjet 450 printer

2 2 print cartridges – 1 black (HP No. 56) and 1 tri-color (HP No. 57)

3 Power adapter

4 Power cord

5 Parallel cable

6 Battery (optional, comes with the HP Deskjet 450CBi printer)

7 Starter CD

8 Setup poster

9 Reference Guide

10 Regulatory Booklet

Step 2: Unpack the printer

Unpack the printer and remove the packing tape and shipping materials from inside the printer.
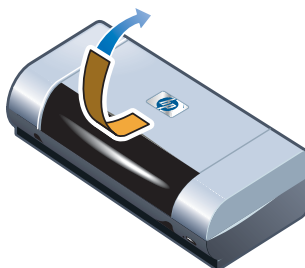
Step 3: Connect the power cord

Connect the power adapter to the power cord and to the printer. Plug in the power cord and make sure the power supply is turned on.
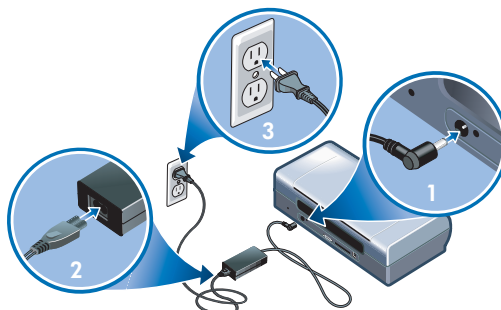
Step 4: Turn on the printer

1 Lift the input tray to its open position.

2 Press the POWER BUTTON to turn on the printer.
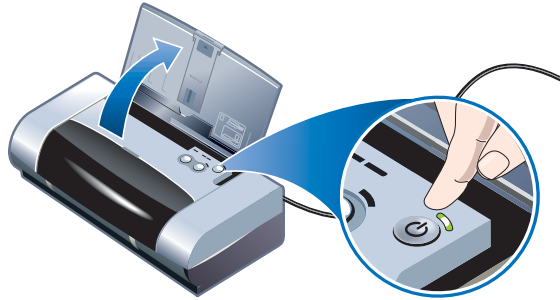
Step 5: Install the print cartridges

To prevent clogs, ink failure, and bad electrical connections, do not touch the ink nozzles or copper contacts on the print cartridges.

1 Remove each print cartridge from its package, and then pull the colored tab to remove the protective film from each cartridge.
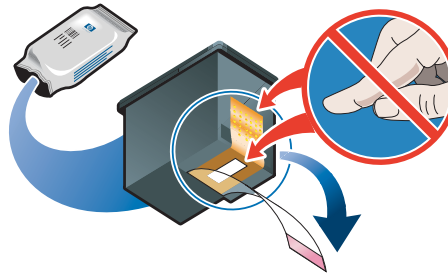
2 Open the front access cover. Wait for the carriage to go to the "print cartridge change" position. This should take only a few seconds.
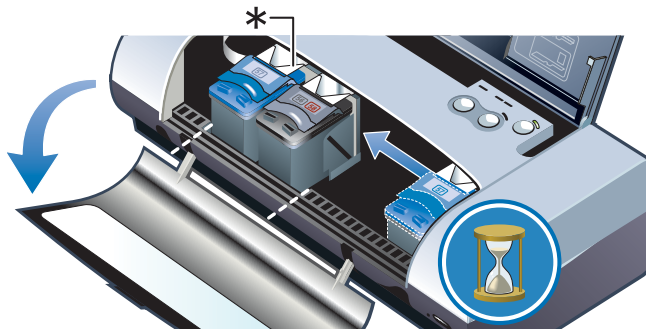
*Print cartridge change position.

⚠️ Change or install print cartridges only when the carriage is in the "print cartridge change" position.

3 Lift the print cartridge latches.

4 Insert each print cartridge into the correct socket (HP No. 57 in the left socket; HP No. 56 or 58 in the right socket). Make sure you insert the print cartridges at a slightly tilted back angle.

📝 If the print cartridge does not fit into its socket, make sure you are inserting the correct print cartridge into the correct socket. Each socket is labeled with the correct product number.

📝 The printer also accepts economy print cartridges for occasional use (HP No. C8727A black print cartridge and HP No. C8728A tri-color print cartridge). See *HP Supplies and Accessories*.

5 Close the print cartridge latches. If the cartridges are inserted correctly, closing the latches pushes the cartridges gently into their sockets. Press the latches to make sure they are seated flat on the cartridges.

6 Close the front access cover. Wait for the carriage to complete the print cartridge initialization routine and return to the home position at the right side of the printer before using the printer.

Do not open the front access cover until the print cartridge initialization is complete.

Step 6: Install the software

Install the printer software from the Starter CD before you connect the parallel or USB cable. For details, see *Installing Software*.

Step 7: Connect the printer cable (if required)

For Windows

If your computer has a USB port and is using Microsoft® Windows® 98, Windows Me, Windows 2000, or Windows XP, you can connect the printer to the computer using a USB cable.

If your computer is using Windows NT® version 4.0 or if your computer is not configured to use USB, you can connect the printer to your computer with the parallel cable that is provided with the printer.

For infrared connection, please see *Infrared printing*.

For Macintosh

If your computer has a USB port, you can connect the printer to the computer using a USB cable.

Step 8: Load paper

1 Slide up the input tray extension.

2 Load media into the input tray. The input tray supports up to 45 sheets of plain paper or a stack of media no more than 0.18 in (4.5 mm) thick.

3 Slide the paper guide snugly against the edge of the media.
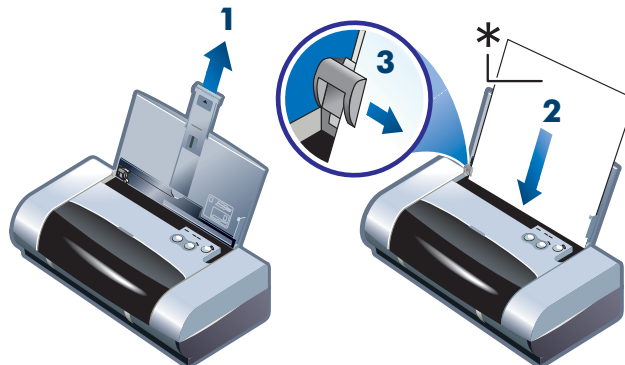
For more information and tips on selecting and loading media, see *Selecting and Using Print Media*. For information on supported media, see *Printer Specifications*.

Step 9: Align the print cartridges

After you install new print cartridges, they must be aligned for good print quality. For details, see *Aligning the print cartridges*.

Using the battery (optional)

The lithium-ion rechargeable battery comes with the HP Deskjet 450CBi printer. It is also available for purchase as an optional accessory (part number C8222A, see *HP Supplies and Accessories*).

Battery safety

●   Use only the C8222A battery with the printer.

The lithium-ion rechargeable battery is mercury-free.

The battery may require recycling or proper disposal at end-of-life.

Batterij niet weggooien maar inleveren als KCA.

●   When discarding a battery, contact your local waste disposal provider regarding local restrictions on the disposal or recycling of batteries.

●   Battery may explode if incorrectly replaced or disposed of in fire. Do not short-circuit.

●   To purchase a replacement battery, contact your local dealer or HP sales office. See *HP Supplies and Accessories*.

●   To avoid risk of fire, burns, or damage to your battery, do not allow a metal object to touch the battery contacts.

●   Do not disassemble the battery. There are no serviceable parts inside.

●   Handle a damaged or leaking battery with extreme care. If you come in contact with the electrolyte, wash the exposed area with soap and water. If it contacts the eye, flush the eye with water for 15 minutes and seek medical attention.

●   Do not expose the battery to storage temperatures above 122°F (50°C) or below 4°F (-20°C).

Understanding the battery
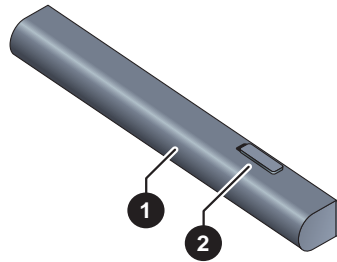
1 **Battery** – Supplies power to the printer.

2 **Battery release slider** – Slides to release the battery.

Installing the battery

You can install the battery with the printer turned on or off.

1 Slide the battery into the battery slot at an angle as shown in the following illustration, until the battery is flushed with the contacts. This also slides the battery contact cover open.

2 Push the battery into the battery slot until the battery clicks into place.
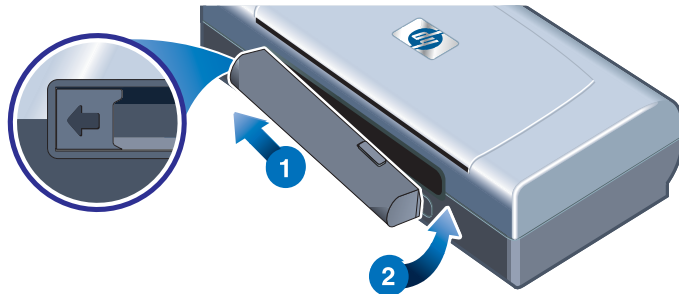
Charging and using the battery

Fully recharge the battery before using. The battery is normally warm while it is charging. Do not charge it in a briefcase or other confined space as this may cause the battery to overheat.

The AC adapter is normally warm to the touch when plugged into an AC outlet.

1 Install the battery.

2 Plug in the AC adapter and turn on the printer. The Battery charge LED is green while charging, and turns off when the battery is fully charged.

After the battery is fully charged, you can use the printer without connecting to the AC power supply.

Important notes

Take note of the following when charging or using the battery:

- It takes approximately 1 hour and 30 minutes to charge.
- The Battery charge LED is green when the battery is charging. If it is red, the battery may be faulty and need to be replaced.
- The Power LED is green when the battery is 41-100% charged, amber when 10-40% charged, and red when less than 10% charged. Charge the battery when the Power LED turns amber. If it turns red, charge the battery as soon as possible. The battery status is also displayed on the Printer Status tab in the Toolbox.
- If your battery is running low, either plug in the AC adapter to charge, or replace the battery with one that is charged.
- A fully charged battery can last up to approximately 350 pages, depending on the complexity of print jobs.
- If the printer is left idle for 10 minutes, it will go into a low-power mode to conserve battery power.
- Prior to long-term storage, charge the battery fully. Do not leave the battery in a discharged (empty) state for more than 6 months.
- To maximize battery life and capacity, observe the following temperature guidelines:
  - Charging: 32° to 104°F (0° to 40°C)
  - Using and storing: -4° to 122°F (-20° to 50°C).

Removing the battery

1 Slide the battery release slider in the direction of the arrow.

2 Remove the battery.
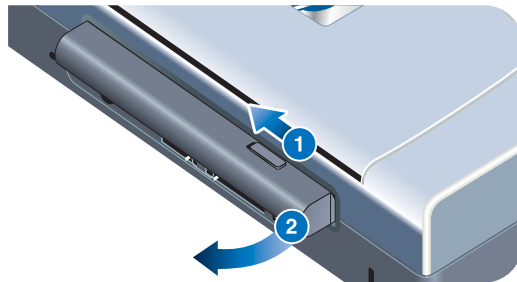
Travel tips

The following tips will help you prepare for traveling with your printer:

- If you are bringing along an extra black or photo print cartridge, store it in the travel holder (part number C8233A, see *HP Supplies and Accessories*) to prevent ink leakage.

- You can bring the printer along in a carrying case (part number C8232A, see *HP Supplies and Accessories*). The carrying case has compartments for both your notebook and the printer. The compartments can also be detached if you want to carry the notebook and printer separately.

- Turn off the printer using the POWER BUTTON. This ensures that the print cartridges are returned to the home position at the right side of the printer and locked in place.

- Disconnect the printer cable and power adapter from the printer. Slide down the input tray extension and close the input tray.

- If you are traveling to another country/region, bring the necessary plug adapter with you.

- Use only the power adapter that is supplied with the printer. Do not use any other voltage transformer or converter. The power adapter can be used with AC power sources of 100 to 240 volts, 50 or 60 Hz.

- Remove the battery if you will not be using the printer for more than a month.

2 Installing Software

This chapter explains how to install your printer software for printing via different connections and devices, including personal digital assistants (PDAs).

Connection	Software needed
USB	Windows or Macintosh printer driver
Parallel	Windows printer driver

Infrared	● Notebook, Powerbook (with infrared capability)
	  – Device's native software
	● Pocket PC hardware
	  – Device's native software or other software (visit the product website for more details)
	● Palm OS PDAs
	  – BtPrint

Bluetooth	● Notebook, Powerbook (with Bluetooth capability)
	  – Device's native software
	● Pocket PC hardware
	  – Device's native software or other software (visit the product website for more details)
	● Palm OS PDAs
	  – BtPrint

Printing from CompactFlash cards (Types I and II) using Digital Print Order Format (DPOF) files is also supported. See *Printing digital camera photographs*.

Installing the printer driver (Windows and Macintosh)

Printer driver software lets a computer communicate with the printer. One of the printer drivers on the Starter CD must be installed on your computer to allow you to take full advantage of the printer features.

If you do not have access to a CD-ROM drive, you can download the printer software from the Internet at http://www.hp.com/support/dj450. You can also download any updates to the printer software from this website.

For information about using the printer driver or changing the printer driver settings, see *Printing from notebooks and desktops (Windows)*.

For Windows

The printer driver software runs on Windows NT 4.0, Windows 98 and above and lets you print via the USB or parallel cable.

The setup software detects the version of the operating system that you are using. If you install a new version of Windows later, you must reinstall the printer driver. For example, if you upgrade from Windows 98 to Windows 2000, you must reinstall the printer driver.

Making copies of the printer software

The Starter CD contains a utility that lets you copy the printer software on to disks. When you run the setup program, select **Customization Utility** to copy disks.

You can also use this utility to copy the printer software to your hard drive or to a network drive. After the files are copied to another location, you can install the printer software from that location.

To install the printer driver

Before you can install the printer driver, you must complete steps 1 through 5 in *Setting up the printer*.

You must have administrator privileges to install a printer driver on a computer running Windows NT 4.0, Windows 2000 or Windows XP.

1 Start Windows and make sure no other applications are running.

2 Insert the Starter CD into your CD-ROM drive. The System Setup Wizard runs automatically.

3 If the System Setup Wizard does not run automatically, click **Start** > **Run**, and then in the command line text box, type the letter of your CD-ROM drive followed by: \SETUP (for example, type D:\SETUP).

4 Click **Install Printer Driver** from the CD Browser menu.

5 Click **Next** at the Welcome screen.

6 Click **Yes** to accept the terms of the license agreement.

7 Select the port that your computer will use to communicate with the printer.

   Select **Express Install using HP recommended defaults** to install all of the printer utilities, including the Toolbox. If you do not select this, continue to step 9. Click **Next**.

You can connect only one cable, parallel or USB, at a time to your printer.

8 Select **I agree to do auto upload** to let myPrintMileage Agent send printer usage information to the myPrintMileage website, where you can view your customized printer usage analysis.

If you do not select this option, you can enable it later through the Toolbox. You can disable the auto-upload at any time through the Toolbox or its icon on the taskbar.

For more details, see *Using the Toolbox*.

Click **Next** and follow the instructions on the screen to complete the software installation.

9 If you did not select **Express Install using HP recommended defaults**, select **Typical Installation** to install all of the printer utilities and click **Next**.

Follow the instructions on the screen to complete the software installation.

-or-

Select **Custom Installation**, click **Next**, and then select which utilities to install.

Installing the Toolbox lets printer error messages display on your computer screen.

Click **Next** and follow the instructions on the screen to complete the software installation.

10 Click **Finish** to reboot the system and complete the installation.

To verify the installation

1 Make sure that the USB or parallel cable is properly connected and the printer is turned on.

2 Right-click the printer icon, and then click:
- **Printing Preferences** (Windows 2000 and Windows XP)
- **Properties** (Windows 98, and Windows Me)
- **Document Defaults** (Windows NT 4.0)

3 On the General tab, click **Print Test Page**. If the test page does not print, see *Printer is not responding (nothing prints)*.

To uninstall the software

The Uninstall option of the setup program lets you remove the printer software from your computer.

You must have administrator privileges to uninstall the printer software in Windows NT 4.0 (Service Pack 6.0 or later), Windows 2000, or Windows XP.

1 Start Windows and make sure no other Windows applications are running.

2   Click **Start** > **Programs** > **hp deskjet 450 printer** > **hp deskjet 450 printer Uninstaller**.

3   Follow the instructions on the screen to remove the printer software.

For Macintosh

You can connect your printer to Apple® computers that use Mac OS 8.6 or later through the USB port. Users of Mac OS 8.6, 9.1 only can also connect through the infrared port.

To install the printer driver (Mac OS 8.6, 9.x and OS X Classic)

Before you can install the printer driver, you must complete steps 1 through 5 in *Setting up the printer*.

Mac OS X Classic is a Mac OS X feature that lets applications built for Mac OS 9.x to run on a Mac OS X computer. Mac OS X Classic applications have a Mac OS 9.x user interface.

1   Insert the Starter CD into your CD-ROM drive and double-click the **CD icon** on the Mac desktop.

2   Double-click the **Installer** icon for the Mac OS that you are using.

3   Follow the instructions on the screen to complete the installation.

4   For USB: Connect the USB cable (purchased separately, part number C6518A)

For infrared: Position the computer so that its infrared port is aligned with the printer's infrared port.

To install the printer driver (Mac OS X)

Follow these steps to add the printer to your computer:

1   Insert the Starter CD into your CD-ROM drive and double-click the CD icon on the Mac desktop.

2   Double-click the **Installer** icon.

3   Open the **Print Center**.

4   Click the **Add Printer** button.

5   Select **USB** from the menu.

6   Select **dj450** from the printer list.

7   Click the **Add** button.

To uninstall the software

The Uninstall option of the setup program lets you remove the printer software from your computer.

1 Restart the computer.

If you do not restart the computer before you uninstall the software, some files are not removed from your computer when you run the Uninstall option.

2 Insert the Starter CD into your CD-ROM drive and double-click the CD icon on the desktop.

3 Double-click the **Installer** icon, and then follow the instructions on the screen.

4 When the **Main Installation** dialog box appears, select **Uninstall** from the pull-down menu located in the upper-left part of the dialog box.

5 Follow the instructions on the screen to remove the printer software.

Installing software for PDAs

The following optional utilities are available for installation on your PDA.

To install any of these software applications:

1 Insert the Starter CD into the CD-ROM drive.

2 Click the **Additional Software** button on the CD browser menu, and select the software you want to install.

3 If you are redirected to a website, download the software from the website and synchronize your PDA to transfer the files from your computer.

Otherwise, you will be directed to a folder on the CD. Select the appropriate language, open the folder, copy the files to your hard disk, and then synchronize your PDA to transfer the files from your computer.

For Palm OS

BtPrint

BtPrint is a print utility for printing from your Palm OS PDA to the printer via the printer's Bluetooth or infrared port. For more information on using BtPrint, go to the IS/Complete website at http://www.iscomplete.com.

System requirements

● Palm OS Version 3.0 or later, with Bluetooth SD/IO card installed

BtPrint will install infrared printing for Palm OS 3, and Bluetooth and infrared printing for OS 4 or later.

To install the HP Deskjet 450 PDA Guide

This guide provides PDA printing instructions, troubleshooting tips, and technical support information. You can transfer this guide to your PDA from the Starter CD or download from the Internet.

To copy from the Starter CD

1 Insert the Starter CD into the CD-ROM drive.

2 Click **Browse Documentation** on the CD browser menu, and select **PDA Guide**.

3 Browse to the language folder of your choice and copy the HP Deskjet 450 PDA Guide and its setup instructions onto your hard disk.

4 Follow the setup instructions and synchronize your PDA to transfer the PDA Guide from your computer.

To download from the Internet

1 Go to http://www.hp.com/support/dj450.

2 If you have Internet access from your PDA, download the HP Deskjet 450 PDA Guide and its setup instructions directly to your PDA.

3 Follow the setup instructions and synchronize your PDA to transfer the PDA Guide from your computer.

Printing from mobile phones

You can print from your mobile phone to the printer. For printing instructions, refer to your phone documentation.

Installing other software

HP Photo Printing Software lets you create and print photo album pages. To install it, insert the Starter CD, click the **Additional Software** button on the CD browser menu, and select it from the list of software shown.

3 Printing

This chapter explains how to print from Windows and Macintosh computers. It also describes printer driver features, printer settings, and how to perform printer tasks.

The printer provides the flexibility of four different connectivity options: USB, parallel, infrared and Bluetooth. Refer to the table at the beginning of *Installing Software* for details. You can also print images with Digital Print Order Format (DPOF) settings from your digital camera via a CompactFlash card.

- To load media and print on various media types such as cards, transparencies and photo paper, see *Selecting and Using Print Media*.
- To print from PDAs, see *Installing software for PDAs*.
- To print images from a CompactFlash card with DPOF settings, see *Printing digital camera photographs*.
- To print from mobile phones, see *Printing from mobile phones*.

Printer features (Windows and Macintosh)

You can use your printer to perform the following functions:

- **Enlarge or reduce documents.** Use the **HP ZoomSmart** feature to resize your documents.
- **Tile pages.** Enlarge and print a page in sections and on different sheets of paper. Then use the sheets of paper like tiles to form a large poster.
- **Create handouts.** Print a multiple-page document on a single sheet of paper (up to 9 pages per sheet for Windows, up to 12 for Macintosh). Each page image is reduced in size.
- **Create a booklet.** Print and collate a multiple-page document by printing two pages on each side of the paper. For example, an eight-page document is printed with pages 1 and 8 on the same side of the paper and pages 2 and 7 on the other side of the paper. Fold the printout in half to create a booklet.
- **Print a mirror image.** Use this feature to print the reflected image of a page. When printing on transparencies, the printed side will be faced down on the projector. The other side can then be written on and cleaned off without damaging the printed side.
- **Perform two-sided printing.** Print on both sides of the page when you select Two-Sided Printing (Duplex) from the printer driver (Windows) or Print Both Sides (Macintosh).

- **Create and use watermarks.** Specify text to be placed in the background of an existing document. For example, you might want to have "draft" or "confidential" placed diagonally across the first page or all pages of a document. (The Watermark feature is only available in Windows.)

- **Enhance pictures.** Use the **HP Digital Photography** feature to enhance the look of your printed pictures. You can adjust contrast enhancement, digital flash, SmartFocus, sharpness, and smoothing settings to meet your printing needs. This dialog box is accessible in Best and Normal modes.

Printing from notebooks and desktops (Windows)

From Windows, you can print via USB, parallel, infrared and Bluetooth.

The printer driver stores the default print settings for most applications. You need to change these settings when you print on media of different sizes or types, or when you want to use an optional feature like two-sided printing.

You can change print settings from the software application that the document was created in. To change the default print settings for all documents, you must do so from the printer driver.

The printer driver help can be activated from the **Help** button, the **F1** key, or a question mark symbol in the upper-right corner in the printer driver (depending on the Windows operating system used). These help screens give detailed information about the driver features.

Installing the Toolbox lets printer error messages display on your computer screen. See *Installing the printer driver (Windows and Macintosh)*.

To change print settings for the current document

1 Click **File** > **Print** > **Properties**. (The actual steps can vary; this is the most common method.)

2 Make the changes, and then click **OK**.

The printer uses the current settings from the application you are using.

To change default print settings

1 Click **Start** > **Settings** > **Printers** to open the Printers folder.

2 Right-click the printer icon, and then click:

- **Printing Preferences** (Windows 2000 and Windows XP)
- **Properties** (Windows 98, and Windows Me)
- **Document Defaults** (Windows NT 4.0)

3   Click the **Setup** tab and select the print settings you want.

4   Once you have made the necessary changes, click **OK** to activate the change and close the **Properties** dialog box.

To print from a Windows application

1   Click **File** > **Print**.

2   Select the printer in the **Print** dialog box, and make any other desired changes to the print settings.

If you primarily use the HP Deskjet 450 printer, you can make it your default printer by clicking **Start** > **Settings** > **Printers**. In the Printers folder, right-click on the printer icon, and then click **Set As Default Printer** in the pop-up menu.

3   Click **Print**.

Infrared printing

If you use a notebook computer equipped with infrared technology, you can establish a wireless connection with the printer to send a print job.

Please refer to your notebook's user documentation for how to configure infrared settings and connections.

1   Locate the infrared lens on the notebook.

2   Align the notebook infrared lens with the printer infrared lens.

Position your notebook so that its infrared lens is within 3 feet (1 meter) from the printer and within a 30-degree total angle from the printer's infrared lens.

Make sure there are no obstacles between the device and printer.

3   Follow the instructions supplied with your notebook to send the job to print.

During the information transfer process, the notebook projects a solid infrared beam to the printer and the infrared LED turns green. When the information transfer is complete, the beam and LED turn off.

Bluetooth printing

If you use a notebook computer equipped with Bluetooth technology, you can establish a wireless connection with the printer to send a print job.

You must have a Bluetooth CompactFlash (CF) card in the printer's CF card slot for Bluetooth printing.

1   Insert the Bluetooth CF card into the printer's CF card slot.

2   Follow the instructions supplied with your notebook to send the job to print.

For more information on using Bluetooth, please refer to the wireless printing guide at http://www.hp.com/support/dj450.

Printing from Macintosh

From Macintosh computers you can print via USB or infrared. Select the printer as the default printer before printing.

Selecting the default printer in Mac OS 8.6, 9.x and OS X Classic

For Mac OS 8.6, 9.x and OS X Classic, use the following method to select the HP Deskjet 450 printer as the default printer in the Chooser.

Setting the printer as your computer's default printer automatically routes all print jobs to that printer.

You can select another printer for a particular document; however, switching printers may affect a document's formatting and pagination. If you select a printer, always check the document for changes in formatting and pagination before printing.

1   Select **Chooser** from the Apple menu.

2   Select **hp deskjet xx** in the upper left window of the Chooser window, where **xx** represents the version of the current printer driver.

3   Select **450** in the right window of the Chooser screen.

4   Close the Chooser.

Selecting the default printer using other options

Other options allow you to select a default printer without using the Chooser. Try one of these options:

●   Click the printer icon on the menu bar, then select **deskjet 450**.

●   Click the control strip icon on the edge of the desktop to expand the control strip. Click the printer icon on the control strip, then select **deskjet 450**.

- Drag the document you want to print to the **deskjet 450** printer icon on the desktop.
- Click the **deskjet 450** icon on the desktop, then click **Printing** on the menu bar. Select **Set Default Printer**.

Selecting the default printer in OS X

Follow these steps to set the printer as the computer's default printer:

1   Open the **Print Center**.

2   Click **dj450**.

3   Do one of the following:

   - Select **Printers** > **Make Default**
   - Press **Command** + **d**

   A blue bullet appears next to the printer name to indicate that it is the default printer.

Infrared printing

You can use a Powerbook computer equipped with infrared technology to establish a wireless connection with the printer to initiate a print job.

For printing instructions, please see *Infrared printing* in the Windows section.

Using the HP Inkjet Utility

For Mac OS 8.6, 9.x and OS X, the HP Inkjet Utility contains tools to calibrate the printer, clean the print cartridges, print a test page, and find website support information.

Displaying the HP Inkjet Utility

1   Double-click the **Macintosh HD** icon on the desktop.

2   Do one of the following:

   - Mac OS 8.6 to Mac OS 9.0: Select **Utilities** > **hp inkjet**.
   - Mac OS 9.1: Select **Applications (Mac (OS 9)** > **Utilities** > **hp inkjet**.
   - Mac OS X: Select **Applications** > **Utilities**.

3   Select **hp inkjet utility**.

Viewing the HP Inkjet Utility panels

The following options are available on the HP Inkjet Utility Panel menu.

- **WOW!:** Prints a sample page to view the print output quality.
- **Test:** Prints a test page or a diagnostic page.
- **Clean:** Cleans the print cartridges.
- **Calibrate Device:** Aligns the print cartridges.
- **Calibrate Color:** Adjusts color to correct problems with tint.
- **Battery Level:** Displays battery charge level information.
- **Configure Printer Settings:** Lets you configure DPOF settings to print from a CompactFlash card using DPOF files.
- **Estimate Ink Levels:** Displays print cartridge ink levels.
- **Support:** Provides access to the HP website where you can find support for the printer and information about HP products and supplies.
- **Register:** Accesses the HP website to register the printer.

Two-sided printing

You can print on both sides of a sheet of paper by manually turning a sheet of paper over and feeding it into the printer again.

To print on both sides of a page, you must specify duplex options in your software application or in the printer driver.

For best results when printing, do not print on paper heavier than 24 lb bond (90 g/m^2) or on both sides of labels or transparencies.

For Windows

1. Load the appropriate paper into the input tray. Be sure to load the paper with the print side up.
2. Click **Start** > **Settings > Printers** to open the Printers folder.
3. Right-click the icon for the printer, and then click:
   - **Printing Preferences** (Windows 2000 and Windows XP)
   - **Properties** (Windows 98 and Windows Me)
   - **Document Defaults** (Windows NT 4.0)
4. Click the **Features** tab, and then under **Document Options**, click **Two-Sided Printing (Duplex)**. Click **OK**.
5. Click **Long Side** or **Short Side** to select the page orientation.

6 Change any other print settings, if necessary, and then click **OK** to close the dialog box.

For two-sided printing, select either **Normal** or **Best** print quality under the **Setup** tab.

7 Click **OK** to print.

8 After the first side of the page(s) is printed, turn the paper over and reload it into the printer.

9 Follow the instructions on the screen to complete the two-sided printing.

For more information on setting print options, see *Printing from notebooks and desktops (Windows)*.

For Macintosh

1 Load the appropriate paper into the input tray. Be sure to load the paper with the print side up.

2 Open the **Layout** panel.

3 Select **Print Both Sides**, the binding orientation you want (select the desired icon), and select **Manual**.

4 After the first side of the page(s) is printed, turn the paper over and reload it into the printer.

5 Follow the instructions on the screen to complete the two-sided printing.

For more information on setting print options, see *Printing from Macintosh*.

Canceling a print job

You can cancel a print job in two ways:

● Press the CANCEL BUTTON on the printer.

Pressing the CANCEL BUTTON clears the job currently being processed by the printer. It does not affect jobs waiting to be processed.

   -or-

● For Windows, double-click the printer icon that appears in the lower right corner of the monitor. Select the document you want to cancel. From the **Document** menu, click **Cancel**.

● For Macintosh, double-click the desktop printer icon, select the print job, and then click **Trash**.

4 Selecting and Using Print Media

This chapter explains how to load media and print on various media types such as cards and transparencies. It also describes how to print digital camera photographs via a CompactFlash card.

For information on changing print settings and printer driver features, see *Printing*.

Selecting print media

Before you use the printer, take some time to familiarize yourself with the various media you can use.

Use HP media for optimum print quality. These print media types are specifically designed to work well with the printer. For information on supported media types, see *Printer Specifications*. For ordering information and part numbers, see *HP Supplies and Accessories*.

Tips for selecting and using print media

For best results, observe the following guidelines:

- Always use paper that conforms to the printer specifications. For a list of supported media, see *Printer Specifications*.
- Paper that is too thin, has a slick texture, or stretches easily can feed improperly through the printer's paper path.
- Paper that is heavily textured or does not accept ink well can cause poorly filled graphics or text.
- Do not use media that is damaged, curled, or wrinkled. Do not use paper with cutouts, perforations, or paper that is heavily textured or embossed. These types of media can cause jams and other problems.
- To prevent multiple picks and paper jams, load only one type of media at a time into the input tray. When adding media, always remove the existing media and realign the new media after loading. Fanning the media stack helps to prevent media feed problems.
- Always load media print-side up, aligned squarely against the alignment guide. The paper guide should be snug, but not tight, against the media.
- Make sure the input tray extension is fully extended.

- Do not load more than 45 sheets of plain paper or a stack of paper more than 0.18 in (4.5 mm) thick into the input tray.
- Insert media vertically (portrait orientation). If you want to print horizontally (landscape orientation), make the selection through your printer driver.
- If you are having media feed problems, see *Solving media feed problems*.

Minimum printing margins

The document margins must match (or exceed) these minimum margin settings in portrait orientation:

Paper Size	Left (1)	Right (2)	Top (3)	Bottom (4)
US	0.25 in (6.35 mm)	0.25 in (6.35 mm)	0.08 in (2 mm)	0.46 in (11.8 mm)
A4	0.14 in (3.4 mm)	0.14 in (3.4 mm)	0.08 in (2 mm)	0.53 in (13.5 mm)
Greeting cards	0.08 in (2 mm)	0.08 in (2 mm)	0.08 in (2 mm)	0.20 in (5 mm)
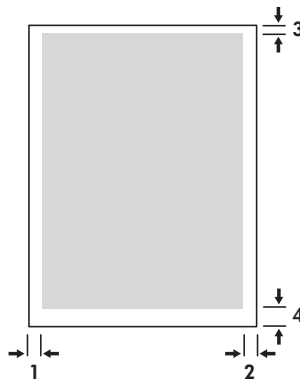
Loading print media

You can print cards and photographs using the input tray or the card slot.

1 Remove all media from the input tray.

   Flip down the card slot if necessary.

2 If your media is 4 x 5 in (101.6 x 152 mm), insert the media print (glossy for photos) side up into the card slot. Ensure that the right edge of the media is squarely against the right edge of the slot. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.
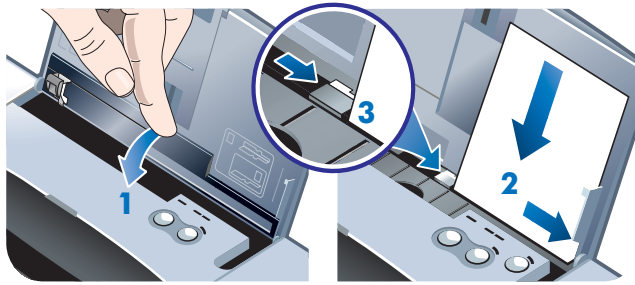
-or-

Insert the media print (glossy for photos) side up into the input tray, making sure that the right edge of the media is squarely against the alignment guide. Adjust the paper guide until it fits snugly against the left edge of the media.
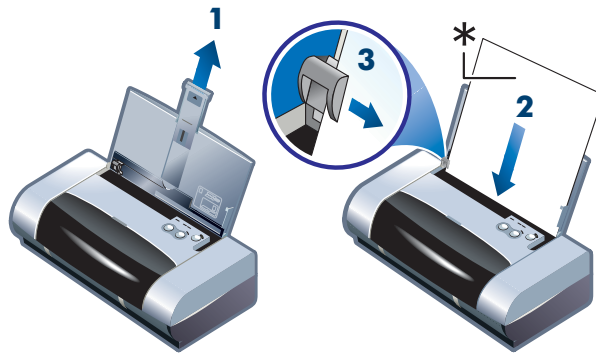
*Glossy side

Printing cards

📝 For PDA printing instructions, refer to the documentation that comes with your PDA printing software.

For Windows

1 Open the printer driver.

2 On the **Setup** tab, select the paper type you are using from the **Paper Type** menu. For example, if you are printing on HP Glossy Greeting Card Paper, select this from the menu.

3 Select the card size from the **Paper Size** menu.

4 Change any other print settings if necessary, then click **OK** to print the card(s).

For Macintosh

1   Select the paper size, then click **OK**.

2   Open the **Paper Type/Quality** panel.

3   Select the paper type you are using. For example, if you are printing on HP Glossy Greeting Card Paper, select this from the menu.

4   Change any other print settings if necessary, then click **OK** to print the card(s).

Printing photographs

You can print photographs from your digital camera via a CompactFlash (CF) card or from a software application, such as **HP Photo Printing Software**.

For media loading details, see *Loading print media*.

Calibrating color

Calibrate the color only when the tri-color (HP No. 57) and photo (HP No. 58) print cartridges are installed together. The photo print cartridge is available for purchase as an optional accessory (see *HP Supplies and Accessories*).

Calibrating color is only necessary when printed colors have visibly shifted toward yellow, cyan or magenta, or there is a color tinge in the gray shades. Prior to calibration, print a diagnostic page for color and check ink levels to ensure that print cartridges are functioning properly.

For calibrating instructions, see *Calibrating color*.

For information on replacing the black print cartridge with the photo print cartridge, refer to *Replacing the print cartridges*. You need to align the print cartridges for best possible print quality. For instructions, see *Aligning the print cartridges*.

It is not necessary to calibrate the color when in single-cartridge printing mode or when printing using the tri-color print cartridge in combination with the black print cartridge. For more information on single-cartridge printing mode, see *Single-cartridge printing mode*.

For Windows

1   Open the printer driver.

2   On the **Setup** tab, select the paper type you are using from the **Paper Type** menu. For example, if you are printing on HP Premium Plus Photo Paper, select this from the menu.

3   Under **Print Quality**, click **Best**.

Use **Best** mode to print photographs. You can select **4800 x 1200 Optimized dpi*** for optimum print quality for photographs. In this mode, printing takes longer and more memory is required from your notebook or desktop.

*Up to 4800 x 1200 Optimized dpi color printing on hp premium photo papers and 1200 x 1200 input dpi.

4   Select the paper size from the **Paper Size** menu.

5   Change any other print settings if necessary, then click **OK** to print the photo(s).

It is recommended to remove each sheet of media as it prints and set aside to dry. Allowing wet media to stack up may cause smearing.

For Macintosh

1   Select the paper size, then click **OK**.

2   Open the **Paper Type/Quality** panel.

3   Select the paper type you are using. For example, if you are printing on HP Premium Plus Photo Paper, select this from the menu.

4   Click the **Quality** tab and select **Best**.

Use **Best** mode to print photographs. You can select **High Resolution Photo**, which provides up to 4800 x 1200 Optimized dpi*, for optimum print quality for photographs. In this mode, printing takes longer and more memory is required from your notebook or desktop.

*Up to 4800 x 1200-optimized dpi color printing on hp premium photo papers and 1200 x 1200 input dpi

5   Change any other print settings if necessary, then click **OK** to print the photo(s).

It is recommended to remove each sheet of media as it prints and set aside to dry. Allowing wet media to stack up may cause smearing.

Printing digital camera photographs

If your digital camera uses a Type I or II CF card, you can insert the card into the printer to print your photos.

Your camera must support Digital Print Order Format (DPOF) files in order to print directly from the CF card. Review your digital camera's documentation to see if it supports DPOF files.

You can also download photos from your CF card onto your computer's hard disk and print them from a software application such as **HP Photo Printing Software**.

To print photographs on photo paper, see *Loading print media*.

To print from a CompactFlash card

DPOF files are files you create using your digital camera. DPOF files are stored on the CF card and contain information such as which images are selected and how many of each image are to be printed or saved.

The printer can read a DPOF file from the CF card so you do not have to use the printer software to reselect the images to print or save.

To print using a DPOF file:

1 Select the images you want to print by creating a DPOF file on your digital camera. The settings you can specify (such as number of copies) are specific to your camera. See your digital camera's documentation for details on how to create a DPOF file.

2 For Windows, if you have the Toolbox installed, open it and click the **Printer Preferences** tab. Click **Configure Print Settings** and then in the dialog box specify paper type, size, and print quality.

For Macintosh, open the HP Inkjet Utility and click **Configure Printer Settings**.

If you do not have the Toolbox or HP Inkjet Utility installed, print a configuration page to check printer media settings for direct printing. This information will verify whether you are loading the correct media size and type before printing. See *Printing diagnostic and configuration pages*.

3 Turn on the printer.

4 Insert the CF card containing the DPOF file into the CF card slot on the printer. Make sure the front of the card faces toward you and the edge with pin holes is placed into the printer first.

If you do not insert the edge with pin holes into the printer first, you can damage the CF card, the printer, or both.

The Resume LED will blink after a few seconds if there is a DPOF file on the card.

5 Press the RESUME BUTTON to print the images. The printer will automatically recognize the DPOF file on the CF card and print the images according to the specifications you set in the file.

-or-

Press the CANCEL BUTTON if you do not want to print directly from the CF card. If your computer is connected to the printer via USB or parallel, the CF card appears as a drive in Windows Explorer. You can then open and print your photographs with the software application of your choice.

Do not remove the CF card until the print job is completed. Otherwise the print job will be canceled.

Selecting Typical Installation when you install the printer driver (see *Installing Software*) lets your computer read the CF card as a physical disk drive. You can then access your photo files and print them with the software of your choice. Please see the readme.txt file on the Starter CD for more details.

Printing on transparencies

For best results, use HP Premium Plus Inkjet Transparency Film, which is specifically designed to work with the printer, or other transparency film that is designed for inkjet printers.

1   Remove all media from the input tray.

2   Insert the transparencies with the print (rough) side up and the adhesive strip pointing forward into the input tray.

Due to the printer's unique paper path, please load transparencies with the print side up. The print side of the transparencies is the rougher side.

3   Slide the paper guide until it stops at the edge of the transparencies.
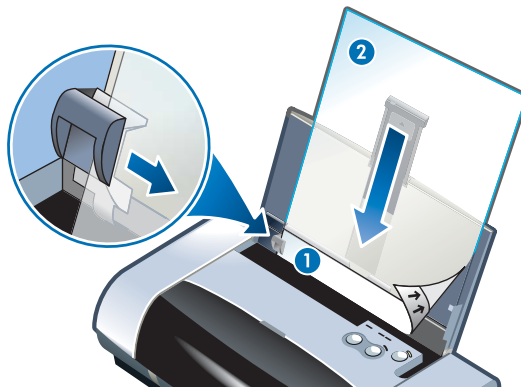
1   Back of adhesive

2   Print (rough) side up

For PDA printing instructions, refer to the documentation that comes with your PDA printing software.

For Windows

1 Open the printer driver.

2 Under **Print Quality**, click **Best**.

Use **Best** mode to print transparencies. This mode provides a longer drying time and ensures that the ink dries completely before the next page exits the printer.

3 Under **Paper Type**, select **Transparency Films**.

Select the type of transparency film you are using. For example, if you are printing on HP Premium Plus Inkjet Transparency film, select this option from the menu.

4 Under **Paper Size**, select the appropriate size for the transparency you are printing.

5 Change any other print settings if necessary, then click **OK** to print the transparencies.

Remove each sheet of media as it prints and set aside to dry. Allowing wet media to stack up may cause smearing.

For Macintosh

1 Select the paper size, then click **OK**.

2 Open the **Paper Type/Quality** panel.

3 Select the paper type you are using. For example, if you are printing on HP Premium Plus Inkjet Transparency film, select this from the menu.

4 Click the **Quality** tab and select **Best**.

Use **Best** mode to print transparencies. This mode provides a longer drying time and ensures that the ink dries completely before the next page exits the printer.

5 Change any other print settings if necessary, then click **OK** to print the transparencies.

Remove each sheet of media as it prints and set aside to dry. Allowing wet media to stack up may cause smearing.

5 Using the Toolbox

The Toolbox provides status and maintenance information about your printer. It also gives you step-by-step guidance for basic printing tasks and provides help for solving printer problems. You can also configure Bluetooth settings and access online resources for your printer.

The Toolbox is available for Windows platforms only. For Macintosh computers, see *Using the HP Inkjet Utility*.

After installing your printer software, you can open the Toolbox by clicking **Start** > **Programs** > **hp deskjet 450 printer** > **hp deskjet 450 printer Toolbox**.

Printer Status tab

The **Printer Status** tab displays print cartridge and battery status. Your computer must establish bi-directional communication in order to display the status. The printer selection pull-down menu lets you select the current printer you want to use with the Toolbox utilities. The status window displays the printer status.

Click this button...	To...
Status Information	Display part number and status information about the installed cartridges, including the estimated amount of remaining ink. Also displays battery information and percentage of charge remaining.
Preferences	Select the Toolbox messages that appear and to enable or disable bi-directional communication.
Order Information	Order supplies.

Information tab

The **Information** tab lets you register the printer, check for updated printer drivers, display printer hardware and print cartridge health information, and create your own printer usage information website. It also gives you access to help information for using the printer, troubleshooting, and contacting HP.

Click this button...	To...
myPrintMileage	Access your printer usage information.
Printer Hardware	Display detailed printer information such as model, firmware version, service ID, and other hardware-related information.
How Do I...	View a list of common printer tasks and help on common maintenance tasks.
Troubleshooting	View a list of printing problems with step-by-step instructions to help solve those printing problems.
hp instant support	Access the hp instant support website. There you will find a set of free web-based tools that help you identify, diagnose and resolve problems with your HP products. You must have an Internet connection to use this feature. **Note:** hp instant support web pages are dynamically created. Bookmarking this site and connecting via the bookmark will not display the current information. Instead, connect from the Toolbox by clicking the **hp instant support** button on the **Information** tab.
Register Your Printer	Register the printer online.
Contact HP	Contact HP.

myPrintMileage

myPrintMileage keeps track of your printer usage information to help you plan the purchase of consumables. It consists of two parts:

- myPrintMileage website
- myPrintMileage Agent, which is a utility installed with the Toolbox on your computer.

myPrintMileage is activated during installation of the printer driver, or through the Toolbox via a link to the myPrintMileage website. You can connect to the myPrintMileage website to view a customized analysis of your printer's usage. You can see:

- The amount of ink you have used. myPrintMileage forecasts how many print cartridges you might use in one year.
- Whether you use more black or color ink.
- The average quantity of media you use per month for each media type.
- Number of pages printed, and the estimated number of pages you can print with the amount of ink remaining.

The myPrintMileage website also provides:

- Links to third-party utilities and software.
- Information on the latest digital printing tools, such as Bluetooth and infrared printing.
- Printing tips.

myPrintMileage web pages are dynamically created. Bookmarking this site and connecting via the bookmark will not display the current information. Instead, connect from the Toolbox by clicking the **myPrintMileage** button on the **Information** tab.

Installing myPrintMileage Agent

myPrintMileage Agent is installed with the Toolbox during printer driver installation. For instructions, see *Installing the printer driver (Windows and Macintosh)*.

You can enable and disable myPrintMileage Agent at any time from the Toolbox or the quick menu on the taskbar.

In order to use myPrintMileage website and myPrintMileage Agent, you must have:

- The Toolbox installed.
- An Internet connection.
- An active Windows USB or parallel bi-directional connection to your printer.

Printer Services tab

The **Printer Services** tab provides utilities that help you maintain and test your printer. You can clean and align your print cartridges, and calibrate the color for your printouts. You can print a demo or diagnostic page, test your printer communication, and configure wireless settings.

Click this button...	To...
Align Print Cartridges	Align the left and right print cartridges.
Clean Print Cartridges	Clean the print cartridges.
Calibrate Color	Balance color tints on printed pages.
Print a Demo Page	Send a demo page to the printer to verify that the printer is connected to the computer correctly and that the printer and printer software are working properly.
Test Printer Communication	Test the printer's cable connection to make sure that bi-directional communication is possible.
Configure Bluetooth Settings	Configure Bluetooth settings for your printer. Bluetooth is a wireless protocol standard that lets wireless devices communicate with your printer.
Configure Print Settings	Set print quality, media size and type for print jobs from PDAs, or CompactFlash cards using DPOF files.

6 Maintaining the Printer

This chapter explains basic printer maintenance. You can find information about the state of the printer and the print cartridges from the Toolbox if you have it installed. You can also perform maintenance functions from the Toolbox.

Cleaning the printer

Remember to turn off the printer and unplug the power cord before cleaning the printer. If using the optional battery, turn off the printer and remove the battery before cleaning.

The printer does not require scheduled maintenance, except for replacing the ink service module (see *Replaceable ink service module*). You should attempt, however, to keep the printer free of dust and debris. This cleaning keeps the printer in peak condition and might also make the diagnosis of problems easier.

When you clean the printer, follow these guidelines:

● Clean the outside of the printer with a soft cloth moistened with mild detergent and water.

Clean the printer only with water or water mixed with a mild detergent. Using other cleaners or alcohol can damage the printer.

● Clean the inside of the front access cover with a dry, lint-free cloth.

Be careful not to touch the rollers. Skin oils on the rollers can cause print quality problems.

Cleaning the print cartridges

If printed characters are incomplete, or if dots or lines are missing from the printouts, you might need to clean the print cartridges. This is a symptom of clogged ink nozzles, which are a result of prolonged exposure to air.

Before you clean the print cartridges, make sure the print cartridge ink levels are not low or empty. Low ink levels can also cause incomplete characters, missing lines, or dots on the printouts. Check the print cartridge LEDs to make sure they are not on (see *LED Reference*). You can also check the status of the print cartridges from the **Printer Status** tab in the Toolbox. Replace any low or empty print cartridges. For instructions, see *Replacing the print cartridges*.

The ink in the print cartridges has been carefully formulated to ensure superior quality and compatibility with your printer. HP is not responsible for damage to the printer that results from modifying or refilling the print cartridges.

There are three cleaning levels available:

- Level 1 cleaning is the quickest and uses the least amount of ink.
- Level 2 cleaning should be performed only if level 1 cleaning was insufficient.
- Level 3 cleaning is the most thorough and consumes the most ink and time. Level 3 cleaning should be performed only if level 2 cleaning was insufficient.

  After each cleaning, the printer prints a test page so that you can check the print quality, and the Toolbox prompts you to perform the next level of cleaning if necessary.

Do not clean the print cartridges unless necessary; cleaning the print cartridges uses ink and shortens the life of the print cartridges.

To clean the print cartridges

If you have the printer driver or Toolbox installed, you can clean the print cartridges from the Services tab in the driver or the Printer Services tab in the Toolbox. You can also clean print cartridges by using the printer buttons. The following procedure shows you how.

Cleaning the print cartridges via the printer buttons does not produce a test page.

To perform a level 1 cleaning

1   Press and hold down the POWER BUTTON.

2   While holding down the POWER BUTTON, press the CANCEL BUTTON twice.

3   Release the POWER BUTTON. The printer begins the print cartridge cleaning process.

To perform a level 2 cleaning

1   Press and hold down the POWER BUTTON.

2   While holding down the POWER BUTTON, press the CANCEL BUTTON twice and then press the RESUME BUTTON once.

3   Release the POWER BUTTON. The printer begins the print cartridge cleaning process.

To perform a level 3 cleaning

1 Press and hold down the POWER BUTTON.

2 While holding down the POWER BUTTON, press the CANCEL BUTTON twice and then press the RESUME BUTTON twice.

3 Release the POWER BUTTON. The printer begins the print cartridge cleaning process.

Aligning the print cartridges

Whenever you replace a print cartridge, you should align the print cartridges for the best possible print quality. If your printout is grainy, has stray dots, jagged edges, or the ink is bleeding into another color on the page, you can re-align them through the Toolbox or the printer driver.

If you are using a PDA, please connect to a Windows or Macintosh operating system and align the print cartridges according to the instructions below.

To align from the printer driver in Windows

1 Load plain paper into the input tray.

2 Click **Start** > **Settings** > **Printers**.

3 Right-click the printer icon, and then click:

- **Printing Preferences** (Windows 2000 and Windows XP)
- **Properties** (Windows 98 and Windows Me)
- **Document Defaults** (Windows NT 4.0)

4 Click the **Services** tab, and click **Align Print Cartridges**.

5 Click **Align** from the **Align Print Cartridges** dialog box.

You are prompted to specify the combination of print cartridges you are using.

6 Specify the combination of print cartridges you are using.

An alignment page prints.

7 Follow the instructions on the screen to select the best-aligned patterns from the alignment page.

8 Click **OK** to close the **Align Print Cartridges** dialog box when the alignment procedure is complete.

If you have the Toolbox installed, you can also align the print cartridges from the Printer Services tab in the Toolbox.

To align in Macintosh (USB only)

1 Open the HP Inkjet Utility and click the **Calibrate Device** button.

You are prompted to specify the combination of print cartridges you are using.

2 Specify the combination of print cartridges you are using.

An alignment page prints.

3 Follow the instructions on the screen to select the best-aligned pattern from the printed page.

To align in DOS

1 Run the **c:\hp450\align.bat** file.

2 Follow the instructions on the screen to print an alignment page and to select the best-aligned pattern from the printed page.
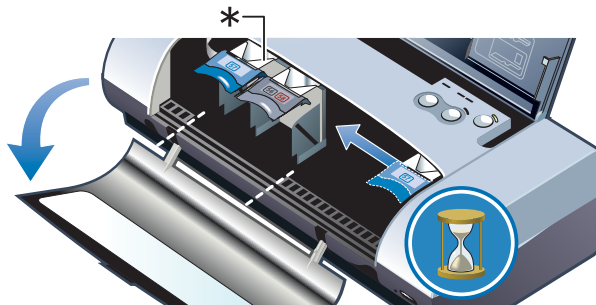
Replacing the print cartridges

When a print cartridge has to be replaced, follow these instructions:

1 Remove the new print cartridge from its package and then pull the colored tab to remove the protective film from the cartridge.

⚠ To prevent clogs, ink failure, and bad electrical connections, do not touch the print cartridge ink nozzles or copper contacts, and do not remove the copper strips.

2 With the printer turned on, open the front access cover. Wait for the carriage to go to "print cartridge change" position. This should take only a few seconds.

*Print cartridge change position.

⚠ Only remove or install print cartridges when the carriage is in "print cartridge change" position.

3 Lift the print cartridge latch open and gently remove the print cartridge from its socket at the angle shown below.

Check the number on the latch against the number on the new print cartridge to make sure you are removing the correct print cartridge.

4 Insert the new print cartridge into its socket at the same angle at which you removed the old print cartridge.

Check the number on the latch against the number on the print cartridge to make sure you are inserting the correct print cartridge.

5 Close the print cartridge latch. If the cartridge is inserted correctly, closing the latch gently pushes the cartridge into its socket. Press the latch to make sure it is seated flat on the cartridge.

6 Close the front access cover.

7 Wait for the carriage to complete the print cartridge initialization routine and return to the home position at the right side of the printer before using the printer.

Do not open the front access cover until the print cartridge initialization is complete.

After the print cartridge is replaced, you need to align the print cartridges. See *Aligning the print cartridges.*

Single-cartridge printing mode

If one of your print cartridges runs out of ink before you can replace it, you can still print with a single print cartridge.

Printing with one print cartridge may be slower, and colors will differ from those when both print cartridges are installed. It is recommended to install both print cartridges.

- If you do not have a replacement black print cartridge available, you can remove the black print cartridge and print with only the tri-color print cartridge.
- If you do not have a replacement tri-color print cartridge available, you can remove the tri-color print cartridge and print with only the black or photo print cartridge. Documents will print in grayscale.
- If you do not have a replacement photo print cartridge available, you can remove the photo print cartridge and print with only the tri-color print cartridge.

Calibrating color

Calibrate the color only when the tri-color (HP No. 57) and photo (HP No. 58) print cartridges are installed together. The photo print cartridge is available for purchase as an optional accessory. See *HP Supplies and Accessories*.

If you are using a PDA, please connect to a Windows or Macintosh operating system and calibrate the color according to the instructions below.

Color calibration balances color tints on printed pages. It is only necessary if:

- Printed colors have visibly shifted toward yellow, cyan or magenta.
- There is a color tinge in the gray shades.

Low ink levels in the print cartridges may also produce incorrect colors.

For Windows

You can calibrate the color from the Toolbox or the printer driver.

1. Load plain paper into the input tray. The process uses one sheet of paper.
2. From the Toolbox click the **Printer Services** tab and then click **Calibrate Color**.

    -or-

    To calibrate from the printer driver, click **Start** > **Settings** > **Printers**. Then right-click the printer icon and select:

    - **Printing Preferences** (Windows 2000 and Windows XP)
    - **Properties** (Windows 98 and Windows Me)
    - **Document Defaults** (Windows NT 4.0)

    Click the **Services** tab and then click **Calibrate Color**.

3 Click **Calibrate** to calibrate the color, or click **Use Defaults** to restore color values to factory defaults.

4 Follow the instructions on the screen.

For Macintosh

1 Open the HP Inkjet Utility and click the **Calibrate Color** button.

2 Follow the instructions on the screen.

Replaceable ink service module

The replaceable ink service module holds waste ink from the black print cartridge. When it is almost full, the printer LEDs will prompt you to replace it. See *LED Reference*.

When the ink service module is full, the printer will stop printing. If you have a replacement for the ink service module, replace it immediately by following the instructions that come with it.

Otherwise, visit www.hp.com/support/dj450 or see *Customer Support* to get a replacement. In the meantime, remove the black print cartridge to continue printing. The printer can print using only the tri-color print cartridge but the color results and print speed may be affected. See *Single-cartridge printing mode*.

Allowing the ink service module to fill completely can result in black ink spillage.

If you have installed the Toolbox, you can choose to display error messages on your screen when there is a problem with your printer. See *Installing the printer driver (Windows and Macintosh)*.

7 Troubleshooting

This chapter provides solutions to common problems, such as paper jams and poor print quality. If your printer is not operating properly and these suggestions do not solve your problem, try to print a diagnostic page, and then contact HP Customer Support (see *Printing diagnostic and configuration pages* and *Customer Support*).

General troubleshooting tips

If you have a problem with the printer or have trouble printing, first try the following troubleshooting tips to help diagnose and solve the problem:

- Complete the quick checkup steps.
- Print a diagnostic page and a configuration page to help you diagnose printer problems.

Quick checkup

The following steps can help you identify and solve printer problems.

Step 1: Check the power

Make sure the power cord and power adapter are connected firmly to the printer and to a working outlet and that the printer is turned on.

If you are using battery power, check the Power LED to make sure the battery power is not low:

- Lights up in green when 41-100% charged
- Lights up in amber when 10-40% charged
- Lights up in red when less than 10% charged

For more information, see *Charging and using the battery*.

Step 2: Check the front access cover

Make sure the front access cover is closed.

Step 3: Check the printer connection

Parallel or USB

Make sure your printer is connected directly to the parallel or USB port. Do not share the port with other devices, such as a Zip drive. Make sure the cable is connected firmly to the printer and computer.

Infrared

Make sure any necessary software is installed in the host device, for example, BtPrint for Palm OS PDA users. If you are still having problems, consult the infrared documentation for the PDA or laptop device.

Tips for infrared connections

● Place the infrared-sending device so its infrared lens is within 3 feet (1 meter) from the printer and within a 30-degree total angle from the printer's infrared lens. The printer's infrared LED turns green when receiving an infrared transmission.

● If the infrared-sending device is moved out of range of the printer's infrared lens at any time during the printing process, the printer will stop printing and await additional data. If you realign the devices quickly, the print job should resume.

● Continue to keep the infrared-sending device aimed at the printer's infrared port while the printer is receiving the file. You can move the device away after the printer's infrared LED turns off.

Bluetooth

Make sure any necessary software is installed in the host device, for example, BtPrint for Palm OS PDA users. Make sure your Bluetooth settings are correct. To do so, you need to connect the printer to the computer via a USB or parallel cable. Open the Toolbox, click the **Printer Services** tab and then click the **Configure Bluetooth Settings** button. Make sure your Bluetooth settings are correct. See also *Wireless printing problems* and *Bluetooth printing*.

Tips for Bluetooth connections

For more information on using Bluetooth, see the wireless printing guide at http://www.hp.com/support/dj450.

CompactFlash

If the Resume LED does not blink after inserting the CompactFlash (CF) card, this means there are no DPOF files created on the CF card. To print from the CF card, you need to specify your print settings in a DPOF file so that the printer can print out images specified in the DPOF file. See *Printing digital camera photographs*.

Step 4: Check the printer selection

Make sure your printer is selected as the current or default printer. If you are running Windows, make sure **Pause Printing** is not selected. For Macintosh, make sure **Stop Print Queue** is not selected.

Step 5: Check the print settings

Make sure the print settings (such as paper type, paper size, margins, and color) in the printer driver are correct.

For Windows, print settings are typically available by selecting **File** > **Print** > **Properties** in an application. For Macintosh, they are typically available by selecting **File** > **Page Setup** in an application.

Step 6: Check the print media

Make sure media is loaded correctly in the input tray or card slot with the print side up and that the media is not jammed in the printer.

For information about loading media, see *Selecting print media*. For information about clearing and preventing jams, refer to *Solving media feed problems*.

Step 7: Check the LEDs

If any LED turns on or blinks, see *LED Reference* for the list of printer LED combinations you may encounter, what they indicate and how to solve the problem.

Step 8: Check the print cartridges

Make sure the print cartridges are properly installed and that the protective film covering the ink nozzles has been removed. Make sure the print cartridges are not empty.

If one print cartridge is empty, you can still print with the other print cartridge. See *Single-cartridge printing mode*.

For information about maintaining print cartridges, see *Maintaining the Printer*.

Getting printer information

If you need to call the Customer Care Center, you should print a diagnostic page and a configuration page to obtain printer information. Such information is useful to our Customer Care Center in helping you troubleshoot printer problems. You can also get printer information from the Toolbox by clicking **Printer Hardware** under the **Information** tab. Information on the printer, battery, connectivity, and media types used is available.

Printing diagnostic and configuration pages

The diagnostic page contains detailed printer information, including firmware version number, serial number, service ID, and print cartridge information.

The configuration page contains information such as default page settings, printer media settings and Bluetooth connectivity status.

The printer must not be processing any print jobs while you print the diagnostic or configuration pages.

To print a diagnostic page:

● Hold down the POWER BUTTON and press the RESUME BUTTON 4 times.

To print a configuration page:

● Hold down the POWER BUTTON and press the CANCEL BUTTON 4 times.

Printing a demo page

To verify that your printer is working, print a demo page:

● Hold down the POWER BUTTON and press the RESUME BUTTON once.

However, if you want to verify that the printer is connected to the computer correctly, or that the printer software is working correctly, you need to print a test page from the General tab in the Printer Properties dialog box (Windows) or the Inkjet Utility Panel (Macintosh).

If the test page does not print, see *Printer is not responding (nothing prints)*.

Solving printer problems

The following sections provide solutions to common printer problems.

Printer is not responding (nothing prints)

Check the power

● Press and hold the POWER BUTTON on the printer for a few seconds. After a brief printer startup, you should see a steady green light next to the button.

- If your printer does not turn on, make sure that the power cord and power adapter are firmly connected to the printer and that the power cord is connected from your printer to a working outlet.

- Try turning the printer off and then on again. If this does not solve the problem, turn off the printer, unplug the power adapter from the printer, wait a few seconds, and reconnect the power.

- If you still cannot turn the printer on, you might have a faulty power cord. Unplug the printer and call HP Customer Support. For information about contacting HP, see *Customer Support*.

- If you are using battery power, check the Power LED to make sure the battery power is not low:
  - Lights up in green when 41-100% charged
  - Lights up in amber when 10-40% charged
  - Lights up in red when less than 10% charged

For more information, see *Charging and using the battery*.

📝 If you tried to print when the printer was off, an alert message should have appeared on your computer screen. If the printer was off and you did not see a message when you tried to print, the printer setup might be incorrect. To correct this, reinstall the software that came with your printer.

Check the front access cover

Make sure the front access cover is closed.

Check the printer setup

- Ensure that the correct port is selected and that the printer is connected directly to your computer.

- Make sure the USB or parallel cable is connected firmly to the printer and the computer. Check that only one cable is connected. Do not connect more than one interface cable (parallel or USB) to the printer at the same time. If two cables are connected, turn off the printer and disconnect the cable you are not using.

- For Windows, check to make sure **Pause Printing** is not selected. Click **Start** > **Settings** > **Printers**. In the Printers folder, right-click the printer icon. If **Pause Printing** is checked in the drop-down menu, click it to deselect it.

  For Macintosh, check to make sure **Stop Print Queue** in the Mac desktop's **Printing** menu is not selected.

- Check to make sure your printer is selected as the current or default printer. The default printer is the one that is used if you choose the **Print** command without first specifying which printer you want to use with an application. The default printer should be the printer that you use most often.

  For Windows, if the printer selection is a problem, click **Start** > **Settings** > **Printers**. In the Printers folder, right-click the printer icon and click **Set As Default Printer** in the pop-up menu.

  For Macintosh, see *Printing from Macintosh*.

- For Windows 2000 and Windows XP, make sure the **Use Printer Offline** option is not checked. Click **Start** > **Settings** > **Printers**. In the Printers folder, right-click the printer icon, and then make sure **Use Printer Offline** is unchecked in the pop-up menu.
- For Windows, make sure the **Print to file** option is not checked in the Print dialog box.
- For Windows, try checking **Print directly to the printer** from the **Advanced** tab in the **Printer Properties** dialog box.

Check the print media

Make sure print media is loaded correctly in the input tray and that the media is not jammed in the printer.

Check the print cartridges

Make sure the protective film has been removed from the print cartridges. Make sure the print cartridges are properly installed. Properly close the front access cover.

Try printing a demo page

Hold down the POWER BUTTON and press the RESUME BUTTON once.

Check the hard disk space in your system

If you are printing in high-resolution mode, make sure you have at least 50 MB of hard disk space.

Check the wireless sending device

See *Wireless printing problems*.

Printer takes a long time to print

Check your system configuration

Make sure your computer meets the minimum system requirements for the printer. For information about system requirements, see *Printer Specifications*.

Check the hard disk space in your system

If you are printing graphics-intensive files, make sure you have at least 50 MB of hard disk space.

Check your port setting (Windows 98 only)

The port setting configuration in your system might not be set to ECP (enhanced capability port). See your computer manual for information about how to change your port setting, or contact your computer manufacturer.

Check the status of the print cartridges

If you are printing with a single print cartridge, the print speed may be slower than normal. See *Single-cartridge printing mode*.

Check available system resources

If less than 80 percent of the computer resources are available, printing can be significantly slower. To make more computer resources available, close all unused applications and resend your print job. If necessary, restart your system and then resend your print job.

Be patient

Complex documents containing many fonts, graphics, and/or color photos take longer to begin printing. Printing in **Best** mode prints slower than **Normal** or **Fast** (**Draft** for Macintosh) modes. The Power LED blinks when the printer is processing information.

Printing via a Bluetooth or infrared connection can take longer to print than via a cable connection.

Unexpected printer shutdown

Check the power

If you are using **AC power**, make sure the power cord and power adapter are connected firmly to the printer and to a working outlet, and that the printer is turned on. The Power LED should be green. Try turning the printer off and then on again. If this does not solve the problem, turn off the printer, unplug the power adapter from the printer, wait a few seconds, and reconnect the power.

If you are using **battery power**, make sure the battery is installed properly. Check the Power LED to see if the battery is sufficiently charged. If the Power LED is amber or red, connect to an AC power source to begin charging the battery.

Solving printing problems

This section provides solutions to common printing problems.

If none of the following solutions work, the problem is likely caused by the inability of the software program to properly interpret print settings. Check the release notes on the Starter CD for known software conflicts. Otherwise, check your software program manual, or call the software manufacturer for more specific help with the problem.

A blank page is printed

Check for empty print cartridges

If you are printing black text and a blank page prints, your black print cartridge might be empty. For information about replacing print cartridges, see *Replacing the print cartridges*.

Check the printer selection

For Windows, make sure your printer is selected as the current or default printer. Click **Start** > **Settings** > **Printers** to open the Printers folder. In the Printers folder, right-click the printer icon and click **Set As Default Printer** in the pop-up menu.

For Macintosh, see *Printing from Macintosh*.

Check the parallel or USB port on your computer

If you are using a parallel or USB cable, make sure your printer is connected directly to the port. Do not share the port with other devices, such as a Zip drive.

Meaningless characters are printed

Check the cable connection

A common cause for meaningless characters is a poor cable connection between the printer and computer. Make sure the cable connection at both ends is good and that the cable is securely fastened.

If cables are secure and the problem persists, press the POWER BUTTON to turn off the printer and disconnect the USB or parallel cable from the printer. Turn the printer back on without the connection in place. When the Power LED remains green, reconnect the USB or parallel cable.

Check the wireless connection

If your wireless connection is disconnected and then reconnected, meaningless characters will print. Resend the print job.

Check the document file

Occasionally, a document file becomes corrupted. If you can print other documents from the same software application, try to print using a backup copy of your document, if available.

Check the symbol set

If you are using DOS, use the Deskjet Control Panel (DJCP) to set the appropriate symbol set for the language of your document.

Placement of the text or graphics is wrong

Check the page-orientation setting

The page orientation selected might not be correct for the document you are printing. Make sure the media size and page orientation selected in the software program match the settings in the printer driver.

For instructions about changing print settings, see *Printing from notebooks and desktops (Windows)*.

Check the paper size

- Make sure the paper size selected in the printer driver matches the paper size loaded in the printer.
- The size of the document you are printing might be larger than the media in the tray, so that content is cut off because it is outside the printable area.

  If the layout of the document you are trying to print will fit on a media size supported by the printer, then load the correct media size. Make sure to select the correct page orientation.

  Alternatively, in Windows you can open the printer driver and click **HP ZoomSmart** in the Setup tab. Then select **Scale to fit paper in device** to scale the document to fit the media size currently selected.

- Use the card slot for media 4.72 in (120 mm) width or less. Ensure the paper guide on the slot fits snugly against the media. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.
- If you do not have the Toolbox (Windows) or HP Inkjet Utility (Macintosh) installed, print a configuration page to check printer media settings for direct printing. This information will verify whether you are loading the correct media size and type before printing. See *Printing diagnostic and configuration pages*.

Check the margin settings

If the text or graphics are cut off at the edges of the page, make sure the margin settings for the document do not exceed the printable area of your printer.

For information about margin settings, see *Minimum printing margins*.

Check that the media is loaded correctly

Make sure the media is squarely against the alignment guide and that the paper guide is snug, but not tight, against the media. Load no more than 45 sheets of media or a stack 0.18 in (4.5 mm) thick loaded in the input tray.

Use the card slot for media 4.72 in (120 mm) width or less. Ensure the paper guide on the slot fits snugly against the media. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.

For information on loading media, see *Selecting print media.*

If none of the above solutions worked, the problem is likely caused by the inability of the software program to properly interpret print settings. Check the release notes on the Starter CD for known software conflicts. Otherwise, check your software program manual, or call the software manufacturer for more specific help with the problem.

Something on the page is missing or incorrect

Check the margin settings

Make sure the margin settings for the document do not exceed the printable area of your printer. For information about margin settings, see *Minimum printing margins.*

Check the color print settings

● For Windows, the **Print In Grayscale** check box might be selected. From your software application, open the **Printer Properties** dialog box. Click the **Color** tab and make sure **Print in Grayscale** is not selected.

For Macintosh, adjust these settings from the **Color Panel** in the **Print** dialog box.

● If you are printing with only one print cartridge, see *Single-cartridge printing mode.*

Check if print cartridge is removed

If a print cartridge is removed while a page is printing, the data intended for that print cartridge will be lost and will be missing on the printout. If you remove a print cartridge, make sure to wait until the entire page is printed.

Check the paper size

● Make sure the paper size selected in the printer driver matches the paper size loaded in the printer.

● The size of the document you are printing might be larger than the media in the tray, so that content is cut off because it is outside the printable area.

If the layout of the document you are trying to print will fit on a media size supported by the printer, then load the correct media size. Make sure to select the correct page orientation.

Alternatively, in Windows you can open the printer driver and click **HP ZoomSmart** in the Setup tab. Then select **Scale to fit paper in device** to scale the document to fit the media size currently selected.

●   Use the card slot for media 4.72 in (120 mm) width or less. Ensure the paper guide on the slot fits snugly against the media. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.

●   If you do not have the Toolbox (Windows) or HP Inkjet Utility (Macintosh) installed, print a configuration page to check printer media settings for direct printing. This information will verify whether you are loading the correct media size and type before printing. See *Printing diagnostic and configuration pages*.

Poor print quality

Check the print cartridges

●   Replace any low or empty print cartridges, then try to print again.

●   If your printout is grainy, has stray dots, jagged edges, or the ink is bleeding into another color on the page, try aligning the print cartridges as described in *Aligning the print cartridges*.

●   If you are printing with only one print cartridge, see *Single-cartridge printing mode*.

●   If the lines on the printout are broken, one of the print cartridges may be defective or have clogged ink nozzles. Try cleaning the print cartridges. For instructions, see *Cleaning the print cartridges*.

Check the paper quality

The paper might be too moist or too rough. Make sure that the media you are using meets HP specifications, then try to print again. It is recommended to use inkjet media. See *HP Supplies and Accessories* for a list of HP-recommended media.

Ink is smearing

Check the print mode

●   When you print documents that use a lot of ink, you must allow the pages more time to dry before stacking them. This is especially true for transparencies and photo papers. Select **Best** mode in the printer driver, and carefully remove each printout separately and lay each page out to dry.

●   Color documents that have rich, blended colors can use excess ink, which wrinkles the page during printing and causes smearing. Try using the **Normal** or **Fast** (**Draft** for Macintosh) mode to reduce ink, or use HP Premium Inkjet Paper designed for printing vivid color documents.

Check the media type

- Some types of media do not accept ink well, which causes the ink to dry more slowly and results in smearing. Some thicker cards may also tend to smear.

  For guidelines about selecting media, see *Selecting print media*.

- Check that the media is loaded print-side up.
- Check that the correct media type is selected in the printer driver.

Ink is not filling the text or graphics completely

Check the print cartridges

- The print cartridge might not be sitting properly in the print cartridge carriage. Try removing and then reinstalling the print cartridges.
- Your print cartridge might be out of ink. Replace the empty print cartridge. For instructions, see *Replacing the print cartridges*.
- Try cleaning the print cartridges. For instructions, see *Cleaning the print cartridges*.

Check the media type

- Some media types are not suitable for use with your printer. For guidelines about selecting media, see *Selecting print media*.
- Check that the media is loaded print-side up.

Faded or dull-colored output

Check the print mode

The **Fast** mode (**Draft** in Macintosh) lets you print at a faster rate. This option is good for printing drafts. To achieve better colored printout, select **Normal** or **Best** mode in the printer driver.

Check the printer driver settings

For Windows, try adjusting the **Saturation**, **Brightness** and **Color Tone** from the **Color** tab in the printer driver. For Macintosh, adjust these settings from the **Color Panel** in the **Print** dialog box.

Check the media type print setting

When printing on transparencies or other special media, select the corresponding media type in the **Print Settings** dialog box.

Check the print cartridges

- Check that all the lines on the printout are connected and have printed properly. If the lines are broken, one of your print cartridges is probably out of ink or defective. Check the ink levels, then try cleaning the print cartridges. If this does not work, replace those print cartridges with new ones. For instructions, see *Replacing the print cartridges*.

- If you have the tri-color and photo print cartridges installed, try calibrating the color. For instructions, see *Calibrating color*.

Colors are printing as black and white

Check the printer driver settings

- For Windows, the **Print In Grayscale** check box is probably selected. From your software application, open the **Printer Properties** dialog box. Click the **Color** tab and make sure **Print in Grayscale** is not selected.

  For Macintosh, open the **Print** dialog box and from the **Image** panel, make sure that **Grayscale** is not selected.

- If you are printing with only the black or photo print cartridge, the printout will be printed in grayscale. See *Single-cartridge printing mode*.

Wrong colors are printing

Check the printer driver settings

- For Windows, the **Print In Grayscale** check box might be selected. From your software application, open the **Printer Properties** dialog box. Click the **Color** tab and make sure **Print in Grayscale** is not selected.

  For Macintosh, open the **Print** dialog box and from the **Image** panel, make sure that **Grayscale** is not selected.

- For Windows, try adjusting the **Saturation**, **Brightness** and **Color Tone** from the **Color** tab in the printer driver. For Macintosh, adjust these settings from the **Color Panel** in the **Print** dialog box.

Check the print cartridges

- When colors are completely wrong, the printer might have run out of one or more colors of ink. Check the print cartridge LEDs to make sure they are not on (see *LED Reference*). You can also check the status of the print cartridges from the **Printer Status** tab in the Toolbox. Replace any low or empty print cartridges. For instructions, see *Replacing the print cartridges*.

- If you are printing with only one print cartridge, see *Single-cartridge printing mode*.

- If you have the tri-color and photo print cartridges installed, and the color does not print out as expected or there is a color tinge in gray shades, try calibrating the color. For instructions, see *Calibrating color*.

- Whenever print quality noticeably decreases, try cleaning the print cartridges. For instructions, see *Cleaning the print cartridges*.

Bleeding colors in printout

If the ink is spreading on the page or colors are blending together, try the following:

Check the print settings

- Some paper type settings (such as **Transparency Films** and **Photo Papers**) and print quality settings (such as **Best**) require more ink than others. Choose different print settings in the printer driver. Also, make sure that you have selected the correct media type in the printer driver. Selecting the wrong media type causes the wrong amount of ink to be used on the media.
- Check that the media is printed on the print side.

Check the print cartridges

- Make sure the print cartridges have not been tampered with. Refilling processes and the use of incompatible inks can disrupt the intricate printing system and result in reduced print quality and damage to the printer. HP does not guarantee or support refilled print cartridges.

  For information on ordering HP accessories, see *HP Supplies and Accessories*.

- The print cartridges need to be aligned when a print cartridge is replaced. You can align the print cartridges from the printer driver or the Toolbox. For instructions, see *Aligning the print cartridges*.

Colors do not line up properly

Check the print cartridges

- The print cartridges need to be aligned when a print cartridge is replaced. You can align the print cartridges from the printer driver or the Toolbox. For instructions, see *Aligning the print cartridges*.

Check the graphics placement

- Use the zoom or print preview feature of your software to check for gaps in the placement of graphics on the page.

If printing using a single print cartridge

If one of your print cartridges runs out of ink before you can replace it, you can still print with a single print cartridge.

Printing with one print cartridge may be slower, and colors will differ from those when both print cartridges are installed. It is recommended to install both print cartridges. For more information, see *Single-cartridge printing mode*.

Wireless printing problems

Infrared printing does not work

Check for obstacles

Clear any obstacles between the printer and the device from which you are sending the print job. Sunlight, heat from nearby equipment, or other sources of infrared radiation can also cause transmission errors.

Move closer to the printer

Make sure the device is no more than three feet (one meter) from the printer when you send the print job, and that the ports face each other as squarely as possible.

Send the print job again

There may be a loss of data; try sending the print job again.

Check software

Make sure any necessary software is installed in the host device, for example, BtPrint for Palm OS PDA users. If you are still having problems, consult the documentation for the PDA or notebook computer.

Bluetooth printing does not work

Check the wireless settings

From the Toolbox, click the **Printer Services** tab and then click the **Configure Bluetooth Settings** button. Make sure your Bluetooth settings are correct. Also see *Bluetooth printing*.

Send the print job again

There may be a loss of data; try sending the print job again.

Check the software

Make sure any necessary software is installed in the host device, for example, BtPrint for Palm OS PDA users. If you are still having problems, consult the documentation for the PDA or notebook computer.

For more information on using Bluetooth, see the wireless printing guide at http://www.hp.com/support/dj450.

Solving media feed problems

This section provides solutions to common media feed problems.

Media is not picked up from the input tray

- Make sure to pull up the input tray extension.
- Remove the media, fan it, and reload.
- Make sure the media is squarely against the alignment guide and that the paper guide is snug, but not tight, against the media. For media using the card slot, make sure the media is aligned squarely against the right edge of the card slot. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.
- Make sure the media you are using is not wrinkled, bent or curled. Uncurl paper by bending it in the opposite direction of the curl. Do not leave media in the input tray overnight. Leaving media in the input tray overnight can cause it to bend.
- Do not load more than 45 sheets of plain paper or a stack paper more than 0.18 in (4.5 mm) thick into the input tray. For other media input capacity, see *Printer Specifications*.

Paper skew

- Make sure to fully extend the input tray extension.
- Remove the media, fan, and reload.
- Make sure the media is squarely against the alignment guide and that the paper guide is snug, but not tight, against the media. For cards, make sure they are aligned squarely against the right edge of the card slot. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.
- Make sure the media you are using is not wrinkled, bent or curled. Uncurl paper by bending it in the opposite direction of the curl. Do not leave media in the input tray overnight. This can cause it to bend.

Paper output problem

Remove excess media from the output area. If printed media stacks up outside the output slot, it may prevent media from properly exiting the printer.

Print media is jammed

If print media is jammed in the printer, follow these instructions to clear the jam.

1 Turn off the printer.

2 Remove media that is not jammed from the input tray and the output slot.

Do not stick your hands in the input tray. Use tweezers instead and be careful not to scratch the inside of the printer.

3 Locate the media jam.

4 If the media is visible from the output slot, pull it out from the slot. Otherwise, open the front access cover and clear jammed media.

Remove jammed media slowly and steadily to prevent media tear.

5 If the print carriage is obstructing the jam, gently push it to one side and then remove the media.
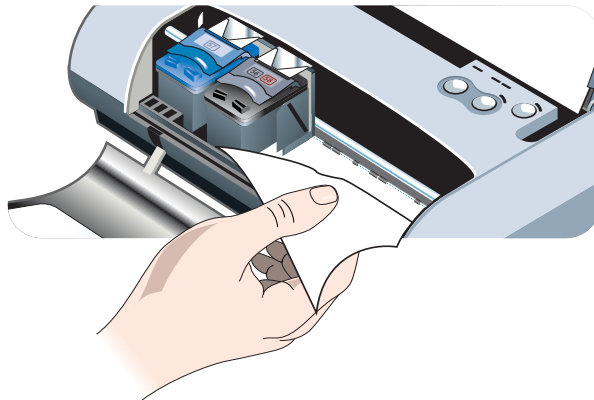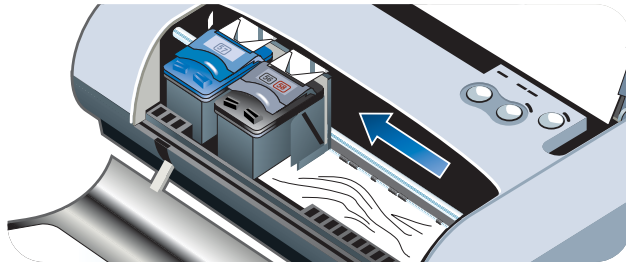
6 If the jammed media is not visible in the print area located inside the printer, remove what is visible in the input tray.

7 After you clear the jam, close the front access cover, turn on the printer, and then press the RESUME BUTTON to continue the print job.

The printer will continue the print job on the next page. You will need to resend the page or pages that were jammed in the printer.

Tips for avoiding paper jams

- Make sure nothing is blocking the paper path.

- Do not overload the input tray or the card slot. The input tray holds up to 45 sheets of plain paper or other print media measuring 0.18 in (4.5 mm) in thickness.

- Load paper properly, making sure the paper is squarely against the alignment guide and that the paper guide is snug, but not tight, against the paper. For cards, make sure they are aligned squarely against the right edge of the card slot. Adjust the paper guide on the slot until it fits snugly against the left edge of the media.

- Do not use paper that is curled or crumpled.

- Always use paper that conforms with the media types/sizes and media weights listed in *Printer Specifications*. See *HP Supplies and Accessories* for a list of HP-recommended media.

- Always stack paper neatly when printing on both sides of the page (two-sided printing).

Solving Macintosh-specific problems

For information about how to troubleshoot Macintosh-specific printing problems, see the Mac Readme file on the Starter CD. To open the Readme file, run the install program from the CD, and then click **Readme**.

A HP Supplies and Accessories

This chapter provides information on HP supplies and accessories, as well as ordering information.

You can order HP supplies and accessories from the HP website. Visit hpshopping.com (http://www.hpshopping.com) for more information.

Accessories

Lithium-ion rechargeable battery	C8222A
Travel holder for black/photo print cartridge	C8233A
Carrying case for printer and notebook	C8232A
24 V auto adapter (for cars and trucks; Europe only)	F2297A
12 V auto/airline adapter (not for trucks)	F1455A
Parallel cable (1 m)	C8231A
USB cable (2 m)	C6518A

Supplies

Print cartridges

HP No. 56 black print cartridge (19 ml)	C6656A
HP No. 57 tri-color print cartridge (17 ml)	C6657A
HP No. 58 photo print cartridge (17 ml)	C6658A
HP No. 27 black print cartridge (10 ml)	C8727A
HP No. 28 tri-color print cartridge (8 ml)	C8728A

HP Multipurpose Paper

500 sheets	US Letter (8.5 x 11 in)	M1120

HP Printing Paper

500 sheets	US Letter (8.5 x 11 in)	P1122
500 sheets	A4 (210 x 297 mm)	CHP210

HP Office Paper

500 sheets	US Letter (8.5 x 11 in)	C8511
500 sheets	A4 (210 x 297 mm)	CHP111

HP Office Recycled Paper

500 sheets	US Letter (8.5 x 11 in)	E1120

HP Bright White Inkjet Paper

250 sheets	US Letter (8.5 x 11 in)	B250
250 sheets	A4 (210 x 297 mm)	C5977B

HP Premium Inkjet Paper

200 sheets	US Letter (8.5 x 11 in)	51634Y
200 sheets	A4 (210 x 297 mm)	51634Z (Asia)

HP Premium Inkjet Heavyweight Paper

100 sheets	A4 (210 x 297 mm)	C1853A

HP Premium Plus Photo Paper

20 sheets, glossy	US Letter (8.5 x 11 in)	C6831A
20 sheets, glossy	A4 (210 x 297 mm)	C6832A (Europe)
20 sheets, glossy	4 x 6 in	C6944A
20 sheets, glossy	10 x 15 cm	C6945A (Europe)
50 sheets, glossy	US Letter (8.5 x 11 in)	Q1785A
50 sheets, glossy	A4 (210 x 297 mm)	Q1786A (Europe)
60 sheets, glossy	4 x 6 in	C7024A

60 sheets, glossy	10 x 15 cm	C7025A (Europe)
20 sheets, matte	US Letter (8.5 x 11 in)	C6950A
20 sheets, matte	A4 (210 x 297 mm)	C6951A (Europe)

HP Premium Photo Paper

50 sheets, glossy	US Letter (8.5 x 11 in)	C6979A
50 sheets, glossy	A4 (210 x 297 mm)	C7040A
15 sheets, glossy	US Letter (8.5 x 11 in)	C6039A
15 sheets, glossy	A4 (210 x 297 mm)	C6040A (Europe)

HP Photo Paper

20 sheets, glossy	US Letter (8.5 x 11 in)	C1846A
20 sheets, glossy	A4 (210 x 297 mm)	C1847A (Europe) C6765A (Asia)
20 sheets, glossy	4 x 6 in	C7890A
20 sheets, glossy	10 x 15 cm	C7891A (Europe)
60 sheets, glossy	4 x 6 in	C7893A
60 sheets, glossy	10 x 15 cm	C7894A (Europe)
50 sheets, glossy	A4 (210 x 297 mm)	C7897A (Europe)

HP Everyday Photo Paper

25 sheets, semi-gloss	US Letter (8.5 x 11 in)	C6983A
25 sheets, semi-gloss	A4 (210 x 297 mm)	C6984A (Europe) C7006A (Asia)
100 sheets, matte	US Letter (8.5 x 11 in)	C7007A

HP Premium Glossy Paper

10 sheets	US Letter (8.5 x 11 in)	C3833A
10 sheets	A4 (210 x 297 mm)	C3831A
50 sheets	US Letter (8.5 x 11 in)	C3836A
50 sheets	A4 (210 x 297 mm)	C3837A

HP Professional Brochure and Flyer Paper

50 sheets, glossy	US Letter (8.5 x 11 in)	C6817A
50 sheets, glossy	A4 (210 x 297 mm)	C6818A
100 sheets, tri-fold, glossy	US Letter (8.5 x 11 in)	C7020A
50 sheets, matte	US Letter (8.5 x 11 in)	C6955A

HP Premium Plus Transparency Film

20 sheets	US Letter (8.5 x 11 in)	C7030A
20 sheets	A4 (210 x 297 mm)	C7031A
50 sheets	US Letter (8.5 x 11 in)	C7028A
50 sheets	A4 (210 x 297 mm)	C7029A

HP Premium Inkjet Transparency Film

20 sheets	US Letter (8.5 x 11 in)	C3828A
20 sheets	A4 (210 x 297 mm)	C3832A
50 sheets	US Letter (8.5 x 11 in)	C3834A
50 sheets	A4 (210 x 297 mm)	C3835A

HP Greeting Card Paper

10 sheets, glossy, white, half-fold (with 10 envelopes)	US Letter (8.5 x 11 in)	C6044A
10 sheets, glossy, white, half-fold (with 10 envelopes)	A4 (210 x 297 mm)	C6045A
20 sheets, matte, white, half-fold (with 20 envelopes)	US Letter (8.5 x 11 in)	C7018A
20 sheets, matte, white, quarter-fold (with 20 envelopes)	US Letter (8.5 x 11 in)	C1812A
20 sheets, matte, white, quarter-fold (with 20 envelopes)	A4 (210 x 297 mm)	C6042A

B Printer Specifications

This chapter provides information about supported media types and sizes and printer specifications.

Print Method	Drop on-demand thermal inkjet printing			
Print Speed*: (Letter)		**Fast**	**Normal**	**Best**
	Black text	9 ppm	5 ppm	1.6 ppm
	Mixed text with color graphics	8 ppm	3 ppm	1 ppm
	Full page color photo	✔	✔	✔
	Color photo 4 x 6 in (101 x 152 mm)	✔	✔	**Best** + up to 4800 x 1200 Optimized dpi**
	*Approximate figures for AC power only. Exact speed dependent on the system configuration, software program, and document complexity.			
Black Resolution	Maximum 1200 x 1200 dpi			
Color Resolution	Windows: 4800 x 1200 Optimized dpi** Macintosh: High Resolution Photo			
Printer Languages	HP Deskjet 450 printer: HP PCL3 enhanced			
Software Compatibility	Microsoft Windows® 98, Me, NT 4.0, 2000, XP; Macintosh System 8.6 and above; MS-DOS applications			
Fonts	13 built-in fonts in portrait orientation. US fonts: CG Times, CG Times Italic, Universe, Universe Italic, Courier, Courier Italic, Letter Gothic, Letter Gothic Italic. International fonts: Arabic, Baltic, Cyrillic, Greek, Hebrew			

**Up to 4800 x 1200 Optimized dpi color printing on hp premium photo papers and 1200 x 1200 input dpi; will require a large amount of disk space and take longer to print.
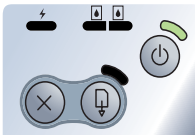
Smart Software Features	Ink Level Indicator, Battery Charge Indicator, hp instant support, myPrintMileage*, Bluetooth Configuration*. Built-in printer driver features: Mirror Image, Rotate 180 Degrees, Use Different First Page, HP ZoomSmart Scaling technology, PhotoREt, 4800 x 1200 Optimized dpi**, Emulate LaserJet Margins, Symmetrical Margins, Two-Sided Printing (Duplex), Handout, Booklet, Tiling, Watermark*, Print from Last Page, HP Preview*, Print in Sepia*, Print in Grayscale, HP Digital Photography, Optimize for Photocopy or Fax, Ink Volume, Align Print Cartridges, Clean Print Cartridges, Calibrate Color. *Windows only **Up to 4800 x 1200 Optimized dpi color printing on premium photo papers and 1200 x 1200 input dpi.	
Media Type/Size	**Paper**	US Legal 8.5 x 14 in (216 x 356 mm) US Letter 8.5 x 11 in (216 x 279 mm) US Executive 7.25 x 10.5 in (184 x 267 mm) ISO A4 210 x 297 mm JIS B5 182 x 257 mm ISO A5 148 x 210 mm
	Transparencies	US Letter 8.5 x 11 in (216 x 279 mm) European A4 210 x 297 mm
	Cards	US Letter 8.5 x 11 in (216 x 279 mm) A4 210 x 297 mm 5 x 8 in Index card 4 x 6 in Photo paper 4 x 6 in Hagaki card 200 x 148 mm Hagaki card 100 x 148 mm
	Label	US Letter 8.5 x 11 in (216 x 279 mm) European A4 210 x 297 mm
Media Handling	**Input tray**	**Plain paper**: up to 45 sheets or 0.18 in (4.5 mm) thick **Photo paper**: up to 15 sheets or 0.18 in (4.5 mm) thick **Labels**: up to 5 sheets or 0.12 in (3 mm) thick **Transparencies**: up to 10 sheets or 0.12 in (3 mm) thick **Cards**: up to 15 or 0.12 in (3 mm) thick
	Card slot	**Cards**: up to 15 or 0.12 in (3 mm) thick **Photo paper**: up to 15 or 0.12 in (3 mm) thick
Recommended Media Weight	**Input tray**	**Paper**: 20 to 24 lb bond (74 to 90 g/m^2)
	Input tray and card slot	**Cards**: up to 100 lb index (200 g/m^2)
I/O Interface	Parallel, USB, Infrared, Bluetooth, CompactFlash (Type I and II)	
Printer Memory	16 MB of built-in RAM	
Dimensions*	13.3 in (338.2 mm) W x 6.5 in (163.7 mm) D x 3.2 in (82.4 mm) H *These are the maximum dimensions.	
Weight	4.2 lb (1.9 kg) without print cartridges and battery 4.63 lb (2.1 kg) without print cartridges but with battery	
Duty Cycle	500 pages/month	

Power Supply	Universal Power Supply	
Power Requirements	**Power adapter**	**Input voltage**: 100 - 240 AC, 50/60 Hz **Output voltage**: 19 VDC, 3.16 A
	Battery	Lithium-ion ~1800 mAh (11.1 VDC)
Power Consumption	Less than 2 watts when off, 5 watts maximum non-printing, 20 watts maximum printing.	
Operating Environment	**Operating temperature**: 0° to 55°C (32° to 131°F) **Recommended operating condition**: 15° to 35°C (59° to 95°F) **Storage temperature**: -40° to 70°C (-40° to 158°F) **Relative humidity**: 15 to 95% RH non-condensing (Recommended: 20 to 80% RH non-condensing) **Battery operating temperatures**: Charging: 32° to 104°F (0° to 40°C); Using and storing: -4° to 122°F (-20° to 50°C) **Noise levels**: 56 dBA	
System Requirements for Windows and Macintosh	**Minimum** Windows 98: P60 MHz, 16 MB RAM Windows NT 4.0: P100 MHz, 32 MB RAM Windows Me: P166 MHz, 32 MB RAM Windows 2000: P166 MHz, 64 MB RAM Windows XP: P233 MHz, 64 MB RAM Mac OS 8.6.x: iMac 333 MHz or G3 350 MHz, 64 MB RAM Mac OS 9.x: iMac 333 MHz or G3 350 MHz, 64 MB RAM; IR: 9.x or later Mac OS X: G3 (except original PowerBook G3), 128 MB RAM **Recommended** For all Windows operating systems except Windows XP: PII 450 MHz, 128 MB RAM, 200 MB hard disk space Windows XP: PII 450 MHz, 256 MB RAM, 200 MB hard disk space Mac OS 8.6.x: iMac 333 MHz or G3 350 MHz, 128 MB RAM Mac OS 9.x: iMac 333 MHz or G3 350 MHz, 128 MB RAM Mac OS X: G4 800 MHz, 256 MB RAM	
Warranty	1-year limited warranty	
Product Certifications	**Safety Certifications**: CCC S&E (China), CSA (Canada), PSB (Singapore), UL (USA), TUV-GS (Germany), CE (European Union), B mark (Poland) **EMI/EMC Certifications**: FCC Title 47 CFR Part 15 Class B (USA), CTICK (Australia and New Zealand), CE (European Union), BSMI (Taiwan), GOST (Russia), ICES (Canada)	

C LED Reference

The printer LEDs indicate printer status and are useful for diagnosing printing problems. This chapter provides a list of LED status light combinations, what they indicate and how to solve the problem.

For a description of the printer's LEDs, see *Understanding printer buttons and LEDs*.

LED indication	Explanation and Recommended Action
Power LED is green.	If using AC power: Printer is turned on and idle.
	If using battery power: Battery is 41-100% charged and printer is turned on and idle.
	● No action required.
Power LED is red.	Battery is less than 10% charged and printer is turned on and idle.
	● Plug in the power adapter to begin recharging the battery. See *Charging and using the battery*.
Power LED is amber.	Battery is 10-40% charged and printer is turned on and idle.
	● Plug in the power adapter to begin recharging the battery. See *Charging and using the battery*.
Battery charge LED is green.	Battery is charging.
	● No action required.
Battery charge LED is red.	Battery is faulty.
	● Replace the battery. See *HP Supplies and Accessories*.
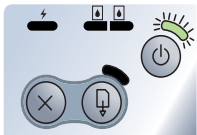
Power LED blinks.	Printer is printing.
	● No action required.

Power, Resume, Left and Right print cartridge LEDs cycle.	Printer is either powering on or off.
	● No action required.
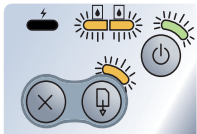
Resume LED blinks.	Printer is either stalled, waiting for special media to dry, out of paper, or processing DPOF printing.
	● If out of paper, load paper. Press the RESUME BUTTON to continue the print job.
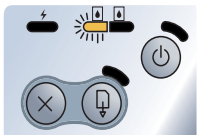
Left print cartridge LED blinks.	Tri-color print cartridge needs attention.
	● Reinstall the print cartridge and try to print. If the error persists, replace the cartridge. See *Replacing the print cartridges*.

Right print cartridge LED blinks.	Black or photo print cartridge needs attention.
	● Reinstall the print cartridge and try to print. If the error persists, replace the cartridge. See *Replacing the print cartridges*.

Right and Left print cartridge LEDs blink.	Tri-color and black or photo print cartridges need attention.
	● Reinstall the print cartridges and try to print. If the error persists, replace the cartridges. See *Replacing the print cartridges*.
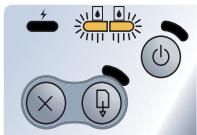
Left print cartridge LED on.	Tri-color print cartridge is low on ink.
	● Replace the print cartridge. See *Replacing the print cartridges*.

Right print cartridge LED on.	Black or photo print cartridge is low on ink.
	● Replace the print cartridge. See *Replacing the print cartridges*.
Right and Left print cartridge LEDs on.	Tri-color and black or photo print cartridges are low on ink.
	● Replace the print cartridges. See *Replacing the print cartridges*.
Power LED off, Resume LED blinks.	Media jam or paper motor stall.
	● Clear the jammed paper. See *Print media is jammed*. After clearing the jam, press the RESUME BUTTON to continue the print job.
	If no paper jam exists, press the RESUME BUTTON. If this does not work, try turning the printer off and then on again, and resend the print job.
Power LED blinks, Resume LED blinks.	Media jam or carriage stall.
	● Clear the jammed paper. See *Print media is jammed*. After clearing the jam, press the RESUME BUTTON to continue the print job.
	If no paper jam exists, press the RESUME BUTTON. If this does not work, try turning the printer off and then on again, and resend the print job.
Power LED blinks, Resume LED blinks, Left and Right print cartridge LEDs on.	Media jam or service station stall.
	● Clear the jammed paper. See *Print media is jammed*. After clearing the jam, press the RESUME BUTTON to continue the print job.
	If no paper jam exists, press the RESUME BUTTON. If this does not work, try turning the printer off and then on again, and resend the print job.
Power LED turns on twice as long as off.	Print job is being canceled.
	● No action required.
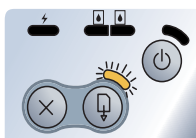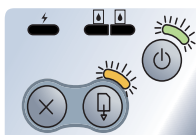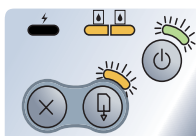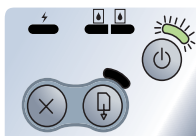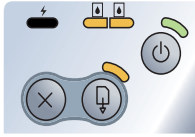
Power LED, Resume LED, Left and Right print cartridge LEDs on.	New firmware is being flashed to the printer. ● No action required.
Power LED on, Resume LED blinks, Right print cartridge LED turns on twice as long as off.	Ink service module almost full. ● If you have a replacement for the ink service module, replace it immediately by following the instructions that come with it. ● Otherwise, visit www.hp.com/support/dj450 or see *Customer Support* to get a replacement. In the meantime, you can press the RESUME BUTTON to continue printing, but this LED error state will remain until the ink service module is replaced. When the ink service module is full, the printer will stop printing.
Power LED on, Resume LED on, Right print cartridge LED turns on twice as long as off.	Ink service module full. ● If you have a replacement for the ink service module, replace it immediately by following the instructions that come with it. ● Otherwise, visit www.hp.com/support/dj450 or see *Customer Support* to get a replacement. In the meantime, you can remove the black print cartridge and print using only the tri-color print cartridge. The color results and print speed may be affected. See *Single-cartridge printing mode*.
Infrared LED on.	Printer is receiving infrared transmission. ● No action required.
Power LED, Resume LED, Left and Right print cartridge LEDs cycle at fast rate.	Printer error. ● Press the RESUME BUTTON to print the error code. Press the POWER BUTTON to reset the printer.
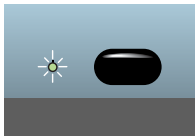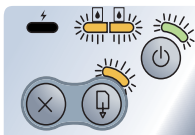
D Customer Support

This chapter provides information on contacting HP Customer Support.

The information in the *Troubleshooting* chapter suggests solutions to common problems. If your printer is not operating properly and these suggestions do not solve your problem, use one of the following support services for assistance.

Internet

Visit our websites for the latest printer software, product, operating system, and support information:

http://www.hp.com/support/dj450

http://www.hp.com/cposupport

hp instant support

You can access hp instant support from the Toolbox. To do so, click the **Information** tab in the Toolbox and then click the **hp instant support** button.

hp instant support web pages are dynamically created. Bookmarking this site and connecting via the bookmark will not display the current information. Instead, connect from the Toolbox.

hp instant support connects you to a set of dynamic web resources that tracks printer status and usage. It includes the following information:

- Printer usage pattern (ink and media usage) via a link to myPrintMileage.
- Online troubleshooting tips

HP telephone support

During the warranty period, you may obtain assistance from the HP Customer Care Center.

Before calling, print a configuration page and have the following information ready:

1 What model printer do you have?

2 What is the serial number of your printer (check the back of your printer)?

3 What is the brand and model of your computer?

4 What is the version of printer software you are using? (Open the printer driver and see the version in the title bar.)

5 Have you printed a diagnostic page?

Have this information ready when you call HP Customer Support at any of the following numbers:

For customers in North America

During Warranty	US: 208 323 2551 Monday through Friday 6am to 6pm (MST)
	Canada: (905) 206 4663 Monday through Friday 8am to 8pm (EST)
Post Warranty	US: 900 555 1500 ($2.50 per minute, maximum of $25.00) or 800 999 1148 ($25.00 per call will be charged to your Visa or MasterCard) Monday through Friday 6am to 6pm (MST)
	Canada: (905) 206 4663 (Visa, MasterCard, or American Express) Monday through Friday 8am to 8pm (EST)

For customers outside of North America

The cost of telephone support and opening hours differ for different regions. Please refer to the HP Customer Care web page at http://www.hp.com/cpso-support/guide/psd/expectations.html for the latest updates on telephone number, cost and opening hours of your regional HP Customer Care Center.

Africa/Middle East 41 22/780 71 11	Argentina (Buenos Aires) 54-11 4778 8380 Outside Buenos Aires 0810 555 5520
Australia (03) 8877 8000	Austria 0660 6386
Bahamas 1 800 711 2884	Bermuda 1 800 711 2884
Belgium (Dutch) 02 626 88 06 (French) 02 626 88 07	Brazil (Grande Sao Paulo) 11 4689 2282 11 4689 2012 Outside Sao Paulo 0800 15 7751 0800 13 0999
Canada (905) 206 4663	Chile 123 800 360 999
Cayman Islands 1 800 711 2884	Costa Rica 0 800 011 0524
China 010 6564 5959 800 810 5959	Colombia 9 800 11 4726
Czech Republic 02 471 7327	Denmark 39 29 4099
El Salvador 800 1785 + 1 800 711 2884	Ecuador (Andinatel): 999119 + 1 800 711 2884 Ecuador (Pacifictel): 1 800 225528
Finland 0203 4 7 288	France 01 43 62 34 34
Germany 0180 52 58 143	Greece 01 6189890

Guatemala 1 800 999 5105	Haiti 183 + 1 800 711 2884
Honduras 800 0 123 + 1 800 711 2884	Jamaica 0 800 711 2884
Hong Kong SAR 300 28555	Hungary 36 1 252 4505
India 9111 682 6035	Indonesia 21 350 3408
Ireland 01 662 5525	Italy 02 264 10350
Japan 0570-000511	Korea (Seoul) 02 3270 0700 Outside Seoul 080 999 0700
Malaysia 03 295 2566	Mexico (Mexico City) 5258 9922 Outside Mexico City 01 800 472 6684
New Zealand 0800 441 147	Norway 22 11 6299
Nicaragua (English): 174 + 1 800 711 2884 Nicaragua (Spanish): 164 + 1 800 711 2884	Panama 001 800 711 2884
Peru 0 800 10111	Philippines 2 867 3551
Poland 22 37 5065	Portugal 1 441 7 199
Puerto Rico 1 800 711 2884	Russia 095 923 50 01
Republica Dominicana 1 800 711 2884	Singapore 6 272 5300
Spain 902 321 123	Sweden 8 619 2170
Switzerland 0 848 80 11 11	Taiwan 2 2717 0055
Thailand 2 6614000	The Netherlands 020 606 8751
Turkey 90 216 579 71 71	United Kingdom 0 207 512 5202
Venezuela 0 800 hpinvent (0 800 474 6836) Caracas 207 8488	Vietnam 8 823 4530

Australia

Post Warranty	If your product is not under warranty, you can call 613 8877 8000. A per-incident, out-of-warranty support fee of $27.50 (inc GST) will be charged to your credit card. You can also call 1902 910 910 ($27.50 charged to your phone account) from 9am to 5pm Monday to Friday. (Charges and support hours are subject to change without notice.)

Calling from elsewhere in the world

Contact your local dealer or nearest HP Sales and Support Office for technical assistance or hardware repair services.

Hewlett-Packard Limited Warranty Statement

HP product	Duration of Limited Warranty
Software	90 days
Accessories	1 year if sold with printer; 90 days if purchased separately
Print cartridges	Limited 6-month warranty if installed by the install-by-date printed on the box.
Printer peripheral hardware (see below for details)	1 year

Extent of Limited Warranty

1 Hewlett-Packard warrants to the end-user customer that the HP products specified above will be free from defects in materials and workmanship for the duration specified above, which duration begins on the date of purchase by the customer.

2 For software products, HP's limited warranty applies only to a failure to execute programming instructions. HP does not warrant that the operation of any product will be uninterrupted or error free.

3 HP's limited warranty covers only those defects that arise as a result of normal use of the product, and does not cover any other problems, including those that arise as a result of:

a Improper maintenance or modification;

b Software, media, parts, or supplies not provided or supported by HP;

c Operation outside the product's specifications.

d Unauthorized modification or misuse.

4 For HP printer products, the use of a non-HP print cartridge or a refilled print cartridge does not affect either the warranty to the customer or any HP support contract with the customer. However, if printer failure or damage is attributable to the use of a non-HP or refilled print cartridge, HP will charge its standard time and materials charges to service the printer for the particular failure or damage.

5 If HP receives, during the applicable warranty period, notice of a defect in any product which is covered by HP's warranty, HP shall either repair or replace the product, at HP's option.

6 If HP is unable to repair or replace, as applicable, a defective product which is covered by HP's warranty, HP shall, within a reasonable time after being notified of the defect, refund the purchase price for the product.

7 HP shall have no obligation to repair, replace, or refund until the customer returns the defective product to HP.

8 Any replacement product may be either new or like new, provided that it has functionality at least equal to that of the product being replaced.

9 HP products may contain remanufactured parts, components, or materials equivalent to new in performance.

10 HP's Limited Warranty Statement is valid in any country/region where the covered HP product is distributed by HP. Contracts for additional warranty services, such as on-site service, are available from any authorized HP service facility in countries/regions where the product is distributed by HP or by an authorized importer.

Limitations of Warranty

TO THE EXTENT ALLOWED BY LOCAL LAW, NEITHER HP NOR ITS THIRD PARTY SUPPLIERS MAKES ANY OTHER WARRANTY OR CONDITION OF ANY KIND, WHETHER EXPRESS OR IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY, SATISFACTORY QUALITY, AND FITNESS FOR A PARTICULAR PURPOSE.

Limitations of Liability

1 To the extent allowed by local law, the remedies provided in this Warranty Statement are the customer's sole and exclusive remedies.

2 TO THE EXTENT ALLOWED BY LOCAL LAW, EXCEPT FOR THE OBLIGATIONS SPECIFICALLY SET FORTH IN THIS WARRANTY STATEMENT, IN NO EVENT SHALL HP OR ITS THIRD PARTY SUPPLIERS BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, WHETHER BASED ON CONTRACT, TORT, OR ANY OTHER LEGAL THEORY AND WHETHER ADVISED OF THE POSSIBILITY OF SUCH DAMAGES.

Local Law

1 This Warranty Statement gives the customer specific legal rights. The customer may also have other rights which vary from state to state in the United States, from province to province in Canada, and from country/region to country/region elsewhere in the world.

2 To the extent that this Warranty Statement is inconsistent with local law, this Warranty Statement shall be deemed modified to be consistent with such local law. Under such local law, certain disclaimers and limitations of this Warranty Statement may not apply to the customer. For example, some states in the United States, as well as some governments outside the United States (including provinces in Canada), may:

   a Preclude the disclaimers and limitations in this Warranty Statement from limiting the statutory rights of a customer (e.g. the United Kingdom);

   b Otherwise restrict the ability of a manufacturer to enforce such disclaimers or limitations; or

   c Grant the customer additional warranty rights, specify the duration of implied warranties which the manufacturer cannot disclaim, or allow limitations on the duration of implied warranties.

3 FOR CONSUMER TRANSACTIONS IN AUSTRALIA AND NEW ZEALAND, THE TERMS IN THIS WARRANTY STATEMENT, EXCEPT TO THE EXTENT LAWFULLY PERMITTED, DO NOT EXCLUDE, RESTRICT, OR MODIFY, AND ARE IN ADDITION TO, THE MANDATORY STATUTORY RIGHTS APPLICABLE

   TO THE SALE OF THE HP PRODUCTS TO SUCH CUSTOMERS.

DECLARATION OF CONFORMITY

according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name:	Hewlett-Packard Singapore (Pte) Ltd
Manufacturer's Address:	Consumer Business, Asia Operations 20 Gul Way, Singapore 629196

declares, that the product

Product Name:	HP Deskjet 450Ci HP Deskjet 450CBi
Model Number:	C8111A/C8225A, C8112A/C8225B
Product Options:	All

conforms to the following Product Specifications:

Safety:	IEC 60950: 1991+A1+A2+A3+A4 EN 60950: 1992+A1+A2+A3+A4+A11 IEC 60825-1: 1993 / EN 60825-1:1994 Class I for LEDs
EMC:	CISPR 22: 1997 Class B / EN 55022: 1998 Class B CISPR 24: 1997 / EN 55024: 1998 FCC Title 47 CFR, Part 15 Class B AS / NZS 3548: 1995 / ICES-003, Issue 3 IEC 61000-3-2:1995 / EN 61000-3-2: 1995 IEC 61000-3-3:1994 / EN 61000-3-3: 1995

Supplementary Information:

(1) The product herewith complies with the requirements of the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC, and carries the CE Marking accordingly.

(2) The product was tested in a typical configuration with Hewlett-Packard personal computer systems.

(3) This Device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Singapore, March 2002   Chan Kum Yew, Quality Manager

Australia Contact: Product Regulations Manager, Hewlett-Packard Australia Ltd, 31-41 Joseph Street, Blackburn, Victoria 3130, Australia

European Contact: Your Local Hewlett-Packard Sales and Service Office or Hewlett-Packard Gmbh, Department, HQ-TRE / Standards Europe, Herrenberger Strasse 130, D-71034 Boblingen (FAX: +49-7031-14-3143)

USA Contact: Corporate Product Regulations Manager, Hewlett-Packard Company, 3000 Hanover Street, Palo Alto, CA 94304 (Phone: 415-857-1501)

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